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REPORT OF THE NEW ENGLAND ASSOCIATION OF COLLEGES AND PREPARATORY SCHOOLS.

THE eleventh annual meeting of the New England Association of Colleges and Preparatory Schools was held in the Girls' High School, West Newton street, Boston, on Friday and Saturday, October 9 and 10, 1896.

FRIDAY AFTERNOON.

The Association was called to order by President L. Clark Seelye, of Smith College, who occupied the chair throughout the meetings. In the absence of the secretary, Dr. Ray Greene Huling, by reason of illness, Dr. Charles W. Parmenter, of the Mechanic Arts High School, Boston, kindly served as temporary secretary.

A Committee on Nominations was appointed, consisting of President William F. Warren, Dr. Horace M. Willard, President George C. Chase. Mr. William F. Bradbury, and Dr. Fred W. Atkinson, to present a list of officers for the ensuing year.

The Association proceeded at once to the discussion of the subject announced upon the programme.

REQUIREMENTS FOR ADMISSION TO SCIENTIFIC SCHOOLS.

PRESIDENT T. C. MENDENHALL, of the Worcester Polytechnic Institute: One of the most pleasing incidents of my youth was

that of listening to that most genial and charming of American humorists, Artemas Ward, in his lecture entitled "Sixty Minutes in Africa." I remember that at the end of a most delightful hour he closed by apologizing to his audience for not having, up to that moment, mentioned Africa, or anything directly connected with the "Dark Continent," of which, however, he had good reason to believe every one of his listeners knew full as much as he. I am going to take the liberty of following his example, at least in some degree, although I will not promise to keep entirely away from my subject, nor will I so frankly admit that it is one concerning which I have not some well-defined views, or about which I have not thought seriously for a good many years. I only wish to make use of my opportunity to express, in the beginning, some general notions of the relation of the public high school and academy to higher institutions of learning, colleges, scientific, technical or professional schools, which I have for a long time entertained, most of which, I believe, are quite generally accepted in theory, and, with equal unanimity, rejected in practice.

A few months ago I received a circular letter from a committee of the Massachusetts Association of Classical and High School Teachers, in which were a number of recommendations relating to the requirements for admission to New England colleges and scientific schools. These recommendations appear to have had their origin in difficulties experienced by the smaller high schools of the state in meeting the requirements of the colleges. They are, for the most part, wise and well presented, and they are here referred to not for the purpose of detailed discussion, but as illustrating the fact that courses of study in the secondary schools and in the colleges are by no means harmoniously adjusted at the present time.

The existing educational problems and conditions are such as have grown out of a historical, rather than a logical development. After a thing has somehow managed to get itself done in this world, it is generally easy to see how it might have been done better, and with a less expenditure of energy, but this

always implies the elimination and exclusion of numerous potent factors whose existence is often recognized only after their work is accomplished. A tolerably large body of doctrine constituting the educational theory of the present time, or the science of pedagogy, has been evolved by the application of logical processes to inadequate and ill-considered premises, and in its development these potent factors have been ignored. On the other hand, the art of education is still more or less, and more rather than less, a hand-to-mouth business, in which a conservative adhesion to past traditions contends with what seems to be an inborn weakness for whatever is new and untried. The best art, using the word in the narrower sense of an expertness in doing things, is that which is based on the science of the thing to be done, although, historically, it often precedes and gives rise to that science. The historical development, therefore, is usually the reverse of the logical, and this is unquestionably true of our educational system. There is nothing new about this statement, and it is made, in its relation to the preceding remarks, only for the purpose of pointing out its application, its very important application, as it seems to me, to the subject of requirements for admission to colleges.

Historically educational growth has been from above downward. The education of the few preceded that of the many, and, in a sense, higher education came before secondary or elementary training. Indeed, the beginning of education consisted mostly of what we now make the end, namely, professional courses; and the first schools were professional schools. The Arabian youth, following, perhaps, the earliest curriculum of which we have any account, learned to ride on the back of a horse, to shoot with a bow and to speak the truth, professional accomplishments, some of which, at least, are not possessed by every liberally educated man of today. It has been fitly said that the education of the Middle Ages "was either that of the cloister or the castle," a monk or a knight being the product. The qualities essential to the priesthood are well known, and as for the knight, it is said that, if well educated, he could do seven

things well, namely, ride, swim, shoot, box, hawk, play chess, and last, but, let us hope, not least, make verses.

The first university in Europe, that of Salerno, had its origin in a school of medicine, and in the twelfth century a school of law was established at Bologna which became, indeed, a center of professional schools, forming the beginning of a great university. But almost contemporaneous with this was the organization of the University of Paris, which may be fairly set down as the first of the "liberal culture" schools. It is interesting to note that this great school had its origin in a fondness for "discussion;" for argument merely for the sake of argument; the best methods for argumentation, included under the term "dialectic," having come to be considered the most valuable of all knowledge. The effects of the twist thus early given to university training are still to be found in our almost universal fondness for controversy.

Closely following the organization of the University of Paris was that of Oxford, England, and a little later that of Cambridge. Many of the earlier institutions of higher learning, however, continued to be largely professional schools. Galileo matriculated at the University of Pisa for the purpose of becoming a physician, and not much encouragement came to him in the beginning of his career as one of the foremost philosophers of all time. Unquestionably these early institutions were largely self contained, and not much in the way of regular or systematic preparation was demanded of those who sought their benefits. As the range of human knowledge became more extended, and especially as it yielded to classification and specialization, teachers of power and originality were unwilling to do the drudgery of routine work along lines thoroughly exploited and easily followed. Such work was relegated to others, and the preparatory, or "fitting," school resulted. The specific object of these schools was to prepare students to enter the particular institutions to which they were related, and as these varied greatly in character and demands there was wide diversity in the work of the preparatory school. Naturally the higher insti-

tution could and did dominate the lower. Whenever a school undertook to fit candidates for more than one higher institution trouble began, and no doubt the plaint of our friends of the Massachusetts Association of Classical and High School Teachers is only an echo of a cry beginning centuries ago.

During these centuries, however, marvelous advances have been made, not only in the increase of human knowledge, but in the demands for its diffusion among men. What was once a luxury of the few has become a necessity of the many, and in America, at least, the education of *all* of the people is generally conceded to be indispensable. To what extent this shall be carried by the state is a question concerning which there has been and will continue to be much discussion, to which I do not mean to contribute at the present time. I shall assume only that in whatever it has done thus far the state has not gone beyond proper limits and, in fact, my argument does not depend upon the admission of even that. The major premise of that argument is that by far the greater number of our secondary schools exist no longer as feeders for colleges, but as an integral part of our great educational system. City and town high schools are avowedly a part of that system; many of the old academies in New England are intimately related to it, and even those that retain a purely private directorship and which might, therefore, prepare young men to be Buddhist acolytes or disciples of Shamanism, if they chose, without transgressing either statute or moral law; even they proclaim more loudly than others the value of their courses in fitting for the responsible duties of citizenship. It is also important to note the well-known fact that of the many thousands annually *beginning* to be educated only a comparatively small proportion ever enter the high school or academy; and of these only a small proportion ever complete the courses there offered; and of these a still smaller proportion ever enter any kind of a college or higher institution. It seems impossible to deny, therefore, that by far the greater part of primary and secondary instruction exists and flourishes independent of any necessary relation to

the requirements of higher institutions of learning. This should never be lost sight of in discussing requirements for admission, nor that other well-recognized educational maxim that the ideal course of study up to and, indeed, through the college should be such that if interrupted at any point there would be nothing to regret.

The necessary, logical conclusion to all this is that *the college has no right to dictate or prescribe the courses of secondary schools*, but that, on the contrary, its requirements for admission ought to be adjusted to and determined by such courses.

This easy solution of our problem, all but universally acceptable in theory, has not found general recognition in practice. That there are difficulties we must all admit. The ideal course for secondary and primary schools has not yet been found, or if found it is lost to the public in the crowd of false claimants. On the other hand, the college has been so long regnant that it yields reluctantly. Indeed its insistence in the matter of requirements for admission to its courses, and especially its recognition of the value of other than the traditional subjects, have greatly benefited secondary schools by furnishing the inspiration of a definite, concrete standard of attainment, which with many is an imperative necessity. Perhaps we are not yet ready to say that the college should yield absolutely and make itself ready to pick up the work where it is left by the high school or academy, asking only that what is done at all should be well and thoroughly done; but we ought not to be content to continue without protest the existing condition of things, in which the college, in many respects and in some localities, has been little less than a domineering tyrant in educational matters. It has unquestionably believed that in adopting this course it has advanced the interests of secondary education, and in some measure this is true, but in too many cases it has resulted in a distinct loss through the suppression of individualism in teaching and of originality in method, together with an unjustifiable expenditure of money and energy in the maintenance of classes and schools which would otherwise have no reason to exist. I

think I need not consume much time in illustrative proof of this Who does not know of teachers who would gladly depart from the beaten path in both the method and material of their work were it not for fear that results might fall short when measured by the traditional standards? Very recently a principal of a large and widely known school admitted in conversation that the demands of one or two colleges dominated the entire curriculum and in even a greater degree the character of the work done by his teachers. He frankly said that the standing and reputation of any one of these teachers must rise and fall by this measure. "If," he said, "my teacher of Latin, for example, should fail for two or three years in getting nearly every candidate through the requirements in this subject, I would be compelled to look about for another, and the same would be true in mathematics and other subjects. I could not stop to ask if the work was being well done, if the students were interested and enthusiastic in it, or if a broader and truer knowledge was theirs; my teachers are compelled to work in the channel which leads to what is our enforced ideal, a 'conditionless pass.'" A rational visitor to the high schools and academies of New England would doubtless be much astonished at the absence of evidence of the personality of the teacher or of the influence of local color or environment. In one subject, for instance, now quite generally taught,—a subject of profound significance in itself and of rare value as a means of intellectual development and training,—in this subject he is likely to find little more than a fleshless, pulseless, spiritless, nearly lifeless skeleton, reduced as it is by the starvation of examination requirements. In saying this I only reflect the opinion of a body of earnest and able men whose business it is to teach this subject, as expressed in a recent discussion during which their own appreciation of the magnitude of their handicap was forcibly expressed. The difficulties and incongruities of the system are, of course, very largely due to the fact that the dictation from above comes often from men who have practically no knowledge of and little sympathy with the work of secondary schools, and very often they

have never been, even in the remotest degree, in touch with the great public school system of the country. The evil consequences would be vastly less if they could be confined to the relatively small number for whom the system is created and maintained, namely, those who actually apply for admission to higher institutions of learning. But this may not be, and we find everywhere the best interests of four out of every five young men or young women quite ignored that the remaining one may be cut and shaped and stretched and pushed into a mould which, after all, often represents but little more than a tradition.

If I am reasonably near correct in these conclusions it appears to be high time to give serious consideration to the relative positions of the cart and the horse in the matter of requirements for admission to institutions of higher learning. As in all similar conditions, the inquiry will, doubtless, have to be pushed from below, but to be finally successful the adjustment must be the result of a sympathetic coöperation of both sides. Great numbers and the immediate possession of the field make an army invincible, if only courage exists and wise counsel prevails. Principals of high schools and academies and those who are concerned with the larger aspects of the educational problem can absolutely direct and control the course of events, provided they have the courage to do so.

The fundamental dogma, on which all of the above rests, though well known, is worth repeating: it is that *in any properly organized scheme of education, higher courses must adjust themselves to lower, to the end that interruption at any point will occasion the least possible waste.*

Having taken advantage of the invitation of your committee, perhaps in some degree unfairly, to express my views on the general subject of admission requirements, I feel that I ought to say a few words in conclusion upon the specific topic assigned to me. You are doubtless all aware that in New England more than in other parts of the country the distinction between the so-called scientific school and the college is maintained, a fact unquestionably due to the existence here of what we call a

"college" long before the appearance of what we call a "school of science." In other parts of the country and in the case of some of the best of the western institutions, the two have been almost contemporaneous in origin, have developed side by side, and form, in fact, integral parts of a greater whole. This fact is eminently worthy of note for the reason that out of it have come two conditions, to which New England is, in some degree at least, a stranger. One of these is that in many cases the requirements for admission to the college and the school of science differ but little, sometimes *not at all;* and the other is that the quality of the training is not thought to be essentially different in the two. This latter fact is reflected in the general tendency, outside of New England, to avoid the use of the word "school," substituting for it the word college as a better index of the relative value and character of the instruction. Thus one hears and reads of a "college of science" and not a scientific school, and in the "Society for the Promotion of Engineering Education," embracing practically all American schools of engineering, it was formally determined a year or two ago to use the phrase "college of engineering" in preference to "school of engineering" or "engineering school." All of this is but giving expression to a sentiment to which I desire to invite your attention; namely, that the scientific schools, including schools of engineering and of technology in its broader sense, must be considered, or at least many of them think they must be considered, as institutions of higher learning, on a different plane from, but certainly not lower than that occupied by institutions which can, perhaps, best be described by the term "old-fashioned colleges." They are the best exponents of what is sometimes called the "*new* education." In contrast to what is still often, but in my judgment erroneously, designated as a "liberal education" I have ventured to claim for it that "even if 'culture effect' be alone considered, it asks no odds of the old, while in the production of sound thinking and a virile intellectuality it is far and away ahead." While in the lead in the development of the nobler faculties of the mind, scientific schools are, however, still

lacking in the cultivation of some important qualities and in the making up of the deficiency they may be greatly assisted by certain changes in admission requirements, or, to be consistent with the earlier part of my discourse, by certain modifications in existing courses for secondary schools, for these modifications are such, I truly believe, as would suggest themselves in carrying out the principle of under-collegiate independence announced above. Among the most important I conceive to be such as will result in giving the average pupil a vastly greater knowledge and command of *his own language* than he now possesses. The relation between language and thought is so intimate that it is almost certain that clear thinking is lacking whenever clear expression is impossible, and clear thinking is the one absolutely indispensable element of success in scientific work. The acquisition of this greater facility in the use of his own tongue will, in a large measure come from a more extended familiarity with its literature, and that, of itself, will be a distinct gain. To this I would link a considerable study of history and civics, leading the pupil to the study of humanitarian questions and his relation to the state. Most scientific and technical schools of good rank are at present agreed in demanding a fair knowledge of the English language and literature and of history; of one modern language besides English; together with elementary algebra, and plane and solid geometry. To these Latin is added in a few cases and also trigonometry. An elementary knowledge of physics or chemistry is rarely called for, and for the very suggestive reason that it is believed by many *professors* of these sciences that such instruction as the secondary schools are now able to give is likely to be more of a hindrance than a help. This opinion is based on the importance of sound fundamental conceptions and the necessity for clear and clean ideas of the elements of any science. Like a wise builder, the efficient instructor concerns himself more with the integrity of the foundation and the roof than of other parts of the structure, and from almost any point of attack we are driven back to the time-worn but never weakening proposition that quality rather than

quantity of performance is, after all, the thing to be aimed at. In the callowness of youth we are prone to judge of men by what they do *not* know or can *not* do, but a larger experience shows us that they are valued for what they *do* know or *can* do —well. The growth of our intellectual powers is, happily, not dependent on any particular diet, but rather upon the thoroughness with which it is digested and the completeness of its assimilation. With these two functions operative, the mind grows strong and active, even on slender rations, while all attempts at stall-feeding in intellectual work must result in intellectual torpidity and eventual paralysis.

PRESIDENT WILLIAM F. WARREN, of Boston University: I have not been intimately associated with the conduct of technical schools, nor with their preparatory schools. I could only sit and receive the suggestions that have been presented and weigh them in the light of general educational principles. There is much force in the suggestions made in respect to any future modifications. But I think there may be a little ambiguity about the principle enunciated that in planning their courses the higher institutions must adjust themselves to the lower. The connection between the two is so close that it is very difficult to avoid a mutual action and reaction. Those who are conducting the lower schools are themselves so largely the product of the higher institutions that they cannot look at this subject in a way to exclude the influence of the higher institutions. These are perhaps more influential than any others in determining, if not the subject-matter, at least the methods according to which this whole preparatory work is done. And it is certainly a fortunate circumstance that the higher types and forms of education are all the time bringing their influence to bear in this vital way. And in view of this fact it seems to me that the proposition that the higher institutions must adapt their courses to those in the lower is a little difficult to apprehend in perfect clearness.

Again, these lower courses are by no means unalterably fixed; they are continually subjected to criticism in every assembly of secondary school teachers; they are passed in review by the committees that have charge of these schools and by everyone connected with them. They are annually reconsidered and the effort is continually made to

improve them. And these efforts always take into account the higher careers for which these courses are expected to prepare men. In view of this fact it seems to me that the general principle laid down needs, if not modification, at least supplementation.

In this very Association that action and reaction of which I speak has been greatly accentuated. Perhaps nothing in New England has done so much to bring about improvement along these lines as this Association. And if some evils referred to by the author of the essay have passed away, it is due more largely to this Association and those that have grown out of it than to any other one cause. And so I should like to modify the general principle to which reference has been made to the extent of adding the view that there should be an attempt continually, not merely to adjust the higher institutions to the lower, but along with this the counterpart, namely, the attempt to adjust the courses of the lower schools to those of the higher institutions. I think this is perfectly consistent with the other. Certainly the highest ideals of education have been sought for and more clearly studied out in the higher courses and institutions than elsewhere, and the men who have given the best thought and the best contributions in the secondary schools have owed their thought, and their capacity to think, very largely to the education which they have received in the higher institutions themselves. So it seems to me legitimate and helpful to enlarge this general principle by connecting with it the counterpart, and so securing a perfectly intelligent and sympathetic coöperation between the one class of institutions and the other.

Dr. Charles W. Parmenter, of the Mechanic Arts High School, Boston: I have listened with deep interest to the admirable paper presented by Dr. Mendenhall, and desire, at the outset, to express my feeling of personal obligation to him for the emphasis that he has placed upon the proposition that the permanent interests of the secondary schools should be the determining consideration in fixing the requisitions for admission to the higher institutions. That principle is so important, and so far reaching in its helpful influence, that it cannot be too strongly emphasized.

Dr. Mendenhall's position is in harmony with the advancing educational sentiment of New England. It is impossible to overestimate the advantages, to both higher and secondary education, that have resulted from the spirit of helpful coöperation that has become the

controlling influence in the investigation of all questions touching the interests of the colleges and the schools. No college professor is inclined to fix admission requisitions with reference mainly to the kind and amount of knowledge that he conceives to be essential to success in his own department. That idea has passed away and broader views prevail; but practice has not yet been brought into complete harmony with principles generally admitted.

There is an important fact that should never be overlooked in any consideration of a course of study for secondary schools. No parent, no teacher, no board of examiners, no combination of human agencies, can select the members of the entering class of a secondary school that are certain to profit by a prolonged course of study in a higher institution. An ambitious father can, of course, decide that his son shall go to college, but no one can be certain that the boy ought to go. It is the daily competition of pupils in the class room that reveals their native aptitudes and furnishes a basis for a judgment concerning their probable success in a given field.

Our aim, therefore, should be to secure for the secondary schools courses of study adapted to give the training and knowledge likely to be of greatest value to young persons of secondary school age. The requisitions for admission to the higher institutions should then be so framed that no graduates of a good secondary school who have proved themselves fitted to profit by a prolonged course of study, will meet artificial barriers to their progress. In the smaller cities and towns, the varying needs of pupils will be met by different courses of study in a single school; in the larger cities by special schools each equipped to give a particular kind of training. It is essential, therefore, that the admission requirements of the higher institutions should offer a large range of options, otherwise important schools and many pupils of superior ability will suffer. Moreover, the schools will be compelled to carry a heavy and unnecessary burden until it is possible to secure identity of statement and uniformity of interpretation of the requisitions of the different colleges. All differences of standard that may be deemed necessary should be indicated by the number of subjects required rather than by varying amounts of work in specified subjects.

I desire to enter my protest against any proposition to increase the demands now made upon the secondary schools. The superior pupils in every well-organized high school now do all the work that they can

safely undertake. He who can show how their efforts can be made more fruitful is a friend to be welcomed, but only visionary philosophers, unfamiliar with the facts, will propose additional burdens.

Assuming, then, that any contemplated change in the requisitions for admission to scientific schools will take the form of an enlarged range of options, designed to embrace all substantial subjects that the schools are now prepared to offer, I desire to call attention to the value of the work of the manual training high schools. In response to an enlightened public demand, under the sanctions of recent legislation, a large number of such schools have sprung into existence, and the number is increasing daily. The distinguishing feature of these institutions is the large amount of attention given to drawing and systematic training in the elements of the mechanic arts. No one competent to estimate educational values can examine carefully the methods of instruction in a good manual training high school without being convinced that the shop tasks stimulate mental activity of as high an order as that aroused by the usual academic subjects. The models are carefully graded so as to present new difficulties as soon as a given process is mastered. Errors of judgment, want of forethought, inability to comprehend clear directions or to interpret drawings correctly, blunders in calculations concerning dimensions, and all failures to think clearly and accurately, no less than carelessness and want of skill in manipulation, are exhibited in the imperfect product and forced upon the pupil's attention. Moreover all mistakes are permanently recorded in wood and metal so that the pupil is powerless to conceal his blunders and gain credit for imperfect work. A mistake in the solution of an algebraic problem, or in the translation of a Latin sentence, may be pointed out by a clear-headed classmate and corrected before the paper reaches the teacher, but errors of judgment in machine tool work cannot escape detection. Moreover, the value of any school work depends far less upon the knowledge gained than upon the ideals formed, the ambitions aroused, and the moral impulses deepened into springs of action. The shop tasks make great demands for patience, perseverance, and intelligent self-direction. Rarely does the interest flag, and the commendable zeal and enthusiasm which are well-nigh universal demonstrate that the exercises are stimulating and wholesome. The conditions under which the shop work is conducted are well calculated to develop self-control. Machines are faithful servants, but they are relentless in their punishment of carelessness and bung-

ling. The feeling is instinctively aroused that boyish nonsense cannot be tolerated. No boy can be kept for several years earnestly and cheerfully engaged in what he is compelled to regard as serious business without developing many of the best qualities of manhood.

The interest aroused in the shops doubtless affects favorably the academic work, but the strength of this influence may have been overestimated. The cause of manual training has suffered on account of the exaggerated statements and unwarrantable claims of its over-zealous advocates. I deem it not unreasonable, however, to urge the scientific schools to make a careful study of the mechanical departments of manual training high schools with a view to the possible acceptance of shop work and drawing as equivalent in educational value to some academic subject of admitted respectability — Latin, for example.

The difficulty of estimating the value of such work is not greater than that met in examinations in experimental physics. Certified drawings, notebooks, and finished models may as safely be received in evidence, as notebooks in physics. A laboratory examination in carpentry or machine tool work is by no means impracticable. Such an examination would doubtless be needed to discourage any tendency toward the free and unlimited production of drawings and models at the ratio of 16 to 1; that is 16 parts teacher and 1 part pupil.

The investigation which I urge is of vital consequence to the manual training high schools. It is impossible for these institutions to add appreciably to the academic work which they now undertake. If the requisitions for admission to the scientific colleges are materially increased, the graduates of manual training high schools will be effectually debarred, unless the work in the mechanical departments is made an acceptable equivalent for the added academic subjects. I therefore urge a careful investigation by the scientific colleges of these important schools that are certain to become powerful and beneficent factors in our advancing civilization..

PROFESSOR ALPHONSE N. VAN DAELL, of the Massachusetts Institute of Technology: I wish to make a proposition which comes close to the point that has been raised; and, in spite of Mr. Parmenter's protest, it may seem an enlargement of the programme of the present course. But let me first of all call your attention to the fact that our entrance examinations cover but a very small part of the curriculum which students have pursued. The young men entering technical schools, or at least

the Institute of Technology, after having finished their high school course have, generally speaking, spent as many years in their preparation as the average college student. I do not believe that their preparation is inferior either in quantity or in quality. Neither is their mental caliber inferior. It is therefore safe to say that the official requirements of the technical schools cover, as I said before, but a small part of the ground gone over by the students. If we should call for some increase in the entrance examination, which looks like an enlargement of the course, this might in reality amount only to a request for a more definite employment of a part of the students' time previous to their entering the Institute or the technical school, or at most to a not very difficult change from one study to another.

Mr. Parmenter has said that latitude ought to be given in options. I agree with that proposition in general, if he is willing to add some very necessary restrictions. He has advocated shop work and mechanical work, which are excellent in themselves, but could not be accepted as an equivalent for a deficiency in languages, or in mathematics, or in a subject on which future work must be based. Languages are so intimately connected with thought that deficiency in that line must be a detriment to later work.

I should like to hear what the opinion of the members of this assembly is about the possibility of requiring a knowledge of both French and German as a prerequisite for entering technical schools. I am prompted by the following considerations: 1. Whatever study can well be done in the preparatory schools should not be thrown on the higher institutions. I would deprecate on the other hand, allow me this short parenthesis, the giving of college reading to preparatory pupils. I have frequently found young men who had read classic tragedies in school, and who were unable to translate a sentence in ordinary prose.

2. It seems that this new requirement would tend to prevent some pupils from coming too early to the colleges. It would enable them, when they do come, to give more time to their technical pursuits, and to the technical and literary sides of the languages, to which I believe we can do more justice. I do not say that technological schools should not continue to offer opportunities for making up occasional deficiencies in this line, but it cannot be claimed with justice that this elementary work belongs properly to them.

3. Most schools seem to be ready to teach both French and Ger-

man, and the new requirement would demand apparently nothing more than a simple readjustment of teaching hours. I will read some statements from a table which I compiled last year:

I sent a printed circular to the students of our first year class and received 248 answers. The class contains about 100 more students, of whom I will speak further on. Of these 248 freshmen, 13 had been prepared by tutors; 2 at schools where no languages were taught; 24 (coming from 18 schools) at schools where only French was taught; 6 at schools where only German was taught; 50 had prepared both languages; 111 had chosen French, and 42 German; which means that of 248 students, only 32 could not have studied both languages. Of the 100 who were not present in the class rooms when the circulars were given out, a very large majority had either satisfied the first year requirements in language, or gone farther and satisfied the department that they had studied both French and German to such an extent that their further attendance was judged unnecessary.

It seems to me that in most cases it would not be a hardship to ask students to prepare the elements of both languages before entering the technical schools. I do not believe that the entire preparation in one language is desirable, because there is a part of our subject, I mean the technical and literary sides, with which the higher institutions can deal much better than the preparatory schools, and that part of the work we would like to keep to ourselves. I wish the teachers in the preparatory schools to express their opinion on this very important subject.

MR. CHARLES C. RAMSAY, Principal of the B. M. C. Durfee High School, Fall River, Mass.: The importance and the reasonableness of the question raised by Professor von Daell entitles it to careful consideration; and, although I have not risen to speak in response to his question, yet in passing I am glad to answer it affirmatively. Certainly, the scientific school has a right to demand of candidates for admission preparation in modern languages, if the college demands it in ancient languages. In my school this requirement can be met.

While most of our secondary schools are in the hands of college men rather than technically educated men, still I think that there is sympathy between the scientific schools and the managers of the preparatory schools. The latter find, however, that a difference in dignity and in the quality of aspiration and intention still separates the can-

didates for college from the candidates for scientific schools. It may be that this fact proves that the scientific school has not yet fully established itself in the minds of the people as of equal value or importance with the college. One remedy is in the hands of the schools of science themselves; namely, to make their requirements for admission equivalent to the requirements for admission to the colleges. It is true that the men who come to the technical schools, however, can and frequently do prepare themselves in one year less than those who go to college, This is sometimes true in my school; and I oppose it in the interests of the pupils, of the schools of science, and of my own school. Although it is true that it is possible for a bright boy to go into a scientific school from a good high school in three years, yet this in general ought not to be. The schools of science ought to adjust themselves to the fullest course of study in the preparatory schools, and should not accept pupils after a preparation of but three years. Without this change, the scientific schools must continue to cut into or undermine the secondary schools by doing a part of the work that properly belongs only to the latter. I think a change should be made so that no less than four years' work would be required for admission to scientific schools.

I was very glad because of the contribution to this discussion made by President Warren. If it be true that the colleges and scientific schools are to adjust themselves to the secondary schools, it certainly gives validity to the claim that teachers are mere artisans, each one doing his own small part without any interest in the whole. I should be sorry to think that we are merely craftsmen. We are all interested in the higher education; we are all, moreover, interested in elementary and secondary education. In spite of any statement to the contrary, I am sure that many secondary teachers in New England are as much interested in the higher education as are the professors of the colleges. For one, I am grateful for the leadership in education of the best colleges and universities, and I am anxious that this leadership be wisely and permanently maintained. Our colleges are, and ever will be, the beacon lights of culture; and, as secondary school men, we must do our share toward keeping them in this high position, and point our pupils to them for "light and leading" in the intellectual life.

DR. HARRY W. TYLER, of the Massachusetts Institute of Technology: Reference has been made by President Mendenhall to the

Society for the Promotion of Engineering Education. I have in my hand a copy of the comprehensive report on entrance requirements of engineering colleges, presented by a special committee at the recent meeting of the Society in Buffalo. While the Society has as yet taken no definite action on the report beyond authorizing that it be printed and distributed during the year, I am glad to cite it as evidence that engineering colleges are disposed to show a very active interest in matters of this kind. The report will be mailed in a few weeks to preparatory schools, including, of course, many members of this Association. Some points in it I should like to refer to briefly this afternoon.

As to the inadequacy of requirements for admission to scientific schools, I am well aware that there is much criticism of the kind just expressed by Mr. Ramsay. I do not, however, believe, as the result of information received from nearly all scientific schools and about two hundred and fifty secondary schools throughout the country, that this criticism is fully justified. Most of the schools reporting say that preparation now requires a four-yea r course, and that they cannot meet any material advance in requirements. Some of the stronger city schools express, of course, a different opinion. I should like to quote individual replies, but it would detain the Association too long. At the Massachusetts Institute of Technology, speaking of it because I know it best, we receive a large proportion of our applicants from the excellent high schools of this vicinity, schools which are easily able to meet higher requirements, and would be naturally reluctant to send us candidates who had finished but three years with them. The number of applicants admitted on examination after three years in such high schools is, however, comparatively small; I should say, after inquiry, not more than 10 to 15 per cent. in a class of three hundred. Of these I venture to say that not one-half have really adequate preparation for our work. It is, moreover, by no means clear how they shall be excluded without serious injustice to a larger class of applicants coming from weaker schools all over the country, and entirely unable to meet more difficult requirements. The committee of the Society for the Promotion of Engineering Education does not, of course, regard the objection to advance of requirements as unquestionably final and conclusive. We are convinced, however, that the scientific schools should in general make advances conservatively, and only on very careful and deliberate consideration.

As to uniformity in entrance requirements, the lack of which is the subject of bitter complaint by the schools reporting, the committee will make important and fundamental recommendations, among others that the Society approve a definite list of subjects considered appropriate for entrance requirements, with a specification of topics in each subject. It is not, of course, intended that the entrance requirements of any college should include the entire list, but rather that the requirements of each particular institution coöperating should be selected from such a list.

In regard to the special needs of manual training schools, referred to by the previous speaker, the report of the committee includes the following statement:

"Somewhat apart from the other subjects named stands manual training, including shop work and mechanical drawing.

"It is obviously impossible, even if desirable, to make either of these a requirement for admission to engineering colleges generally. On the other hand, the engineering colleges should be the first to recognize the true value of hand and eye work as a form of education. The committee believes that, as far as practicable, such recognition should be more generally shown by the acceptance of certified work in manual training as an optional requirement by institutions accepting any optional subjects. As previously stated, there are only two engineering colleges that at present require manual training."

PRESIDENT GEORGE C. CHASE, of Bates College: I came to listen rather than to speak, and as it is my first opportunity to meet with you in this Association you will not expect much. I am certainly not prepared to discuss the question of requirements for admission to scientific schools. If I have correctly gathered what the reader of the paper intimates that he has rather ingeniously withheld from us, it is that all education, whether by college or scientific school, is liberal education. I understood the speaker to object to the use of different names for the designation of these schools. Now the word "college" has always had a definite meaning, and the word "scientific school," also, has had a definite meaning. I understand the speaker to maintain that the word college should be applied to both institutions, and that both equally give a liberal education. I would ask whether that is in harmony with the views that prevail generally among educators. I would ask, too, whether it may not still be true that the college does give a

breadth of view and a general culture preparatory for citizenship in the world, which are not given in the scientific school. I would ask, further, whether the aim of the scientific schools is not a particular, a technical aim. Now, if it be true that the college does give breadth and general development, according to the old notion, why should we abandon the convenient and important distinction which these terms mark? And if the ends sought by the college and the scientific school are distinct, how is it possible that the entrance requirements appropriate for the one are equally appropriate for the other? I may have misunderstood one of the speakers, but I thought he maintained that any college should receive applicants on the same terms that are now imposed by the scientific schools. But would not this imply that the college is to abandon what has hitherto been its peculiar work and to assume the functions of the university? I freely concede to those engaged in scientific work the determination of the requirements for scientific work. It has been urged here that it is the province of the secondary school to decide in what subjects its pupils shall be examined for admission to college. But it still seems to me that men with a breadth of view gained by surveying the various fields of thought and knowledge, both in their relations to one another and to the intellectual and moral development of their fellow-beings, should have a share in determining the conditions for admission to institutions established not to train engineers and architects, but to inspire and evolve men.

DR. SAMUEL THURBER, of the Girls' High School, Boston: Amidst all this discussion of the means for effecting a closer articulation between secondary schools and colleges, it will be well for us to remember, — if I may be allowed to interrupt the debate for a moment with an *obiter dictum*, — that the secondary schools do not exist primarily to fit students for the higher schools. The Latin schools may and must articulate with the colleges, and this articulation should suffice for the entire secondary education, leaving the high schools proper, the trade and mechanic arts schools, free to develop on their own lines, as public needs suggest, or as popular ambitions direct. It is not to be thought for a moment that the energetic citizens who pushed to realization the establishment of the splendid Mechanic Arts High School of this city contemplated their school as a feeder to the Institute; it is not to be imagined that the numerous cities and towns now so proud of the high schools they have created are going to be turned aside from their

planning for public needs to contemplate college examination requirements. It is only in America that the conception of secondary education as ancillary to upper education, as dependent on the forms of another organization, and as taking its law from an extraneous jurisdiction,— the conception, that is, of what we know as a fitting school,— really exists at all. The gymnasium of Germany and the lycée of France, as the writings of German and French pedagogists show, study education scientifically, that is, as a philosophy, as a great and sacred national interest. I perceive we are studying it as an articulation; just so far as we high school teachers dally with the requirements of the catalogues, so far we shall distort our courses. I think especially of the requirements in English, which make it impossible, where they are accepted, to give to the all important study of English literature the development which is its due.

MR. CHARLES S. KNOX, of St. Paul's School: In regard to requiring both French and German for our scientific schools, as in regard to all proposals, general and special, for more, higher, and more strictly exacted entrance requirements, I am reminded of the fact that, as things are now, boys not over-fond of books, intended for business and action, regard the scientific preparatory courses and examinations as easier than the classical, and elect them accordingly. Such boys are numerous and influential in our schools, and scholastic authorities have always taken account of them and made a place for them, even in the higher institutions, so as to let them have and take as much as they will. Many of these intend to abandon books at the end of school; many go higher only for a year or two, not expecting to take a degree. Perhaps they receive the necessary consideration and adequate attention beyond school if they are allowed to take "specials" at university, college, or scientific school. If our scientific schools were to make their entrance examinations much higher and stricter than now, these students would largely be rejected and be obliged to appear, if at all, as "specials." The first year's work of the scientific school might thus be taken up at a more advanced point and university degrees be better protected. But the schools would still have these boys in their classes and would have to regulate lessons and teaching a good deal by their proficiency—and so would be prevented from preparing well for any more severe requirements in the present number of preparatory years.

I am aware that the question of remorselessly dropping back into a lower class a defective scholar, who is already too old and overgrown for his fellows, is a more difficult one for boarding schools than for public schools. I only remind you that somewhere in our system such boys must be cared for with due regard for their idiosyncrasies and claims.

And while we admit that very many subjects besides the old-fashioned ones may be made excellent instruments of training and even culture,—perhaps any subject whatsoever in the hands of a determined student,—we yet must ask each such new subject, before giving it equal place with the old-timers as a requirement or option, whether the teaching of it has reached such a degree of definite aim and exact method as to afford the requisite examination tests—satisfactory, that is, both to the examiners and examined. In this respect, great as the improvement in teaching of late years has been, it does not seem to me that English, history, science, or modern languages can be placed upon a level with the old languages and mathematics. Merely to increase the number of hours given to such subjects would not at once elevate them to the point of real and proper options—as instrumentalities of power, and refinement.

I know that the scientific schools succeed well with a class of students with whom often much language-teaching fails, and look forward to the day when their subjects shall come forward to do their full work. But at present it seems best for the scientific schools to lift and enforce their present requirements without changing much their range or increasing the options.

MR. CHARLES C. RAMSAY, principal of the B. M. C. Durfee High School, Fall River, Mass.: I regard Mr. Collar's question well worthy of an answer. I have found that better results are obtained by giving one year, five periods a week, to the Harvard experimental physics required for admission than by giving it two years, two and a half periods a week. But I am free to say that I should like to see two years, or at least one year and a half, allowed for preparation in the Harvard physics. It seems to me that two hours a week in history, physics, or any other branch, is of little avail. With less than four or five periods a week in any subject in a secondary school, very much is lost by mental leakage and evaporation. This, it will be seen, tends to strengthen my position as stated when I last spoke, that we must

have real equivalents among separate subjects, and not equivalents of groups of scraps of subjects, or equivalents of subjects pursued with different degrees of intensity or with varying totals of time. To this true equivalence of subjects, we are bound to come; and for it we ought to ask the colleges and scientific schools to provide in their admission examinations.

MR. BYRON GROCE, of the Boston Latin School: I want to offer another *obiter dictum*. You know that we always have to make allowance for some extravagance in the speeches of those who speak without special forethought and of those who, overflowing with enthusiasm, perhaps unconsciously overstate their own positions, especially when they are making an onslaught on the colleges.

I feel that Mr. Thurber's *obiter dictum* needs another to match it. He says that the German *gymnasia* are independent of the universities and thinks that relation is one we ought to copy. It may be so. But we are hearing, just now, a good deal about the need this country has of being financially independent of England; perhaps we ought to be educationally independent of Germany. At any rate, whatever may be the relations between colleges and high schools here in the East,—and it is the glory of this Association that it has made those relations closer every year,—in some parts of the West we have an American system, in which, *by law*, colleges and high schools are *inter*dependent.

But this is not the chief point of my *obiter dictum*. That is directed to Mr. Thurber's astonishing statement that the demands of the colleges in English have belittled the study of English in the fitting schools. I do not believe it. On the contrary, the enormous progress in the teaching of English in late years is due to the impulse of the colleges given twenty years ago, when the entrance requirement was changed from one in English grammar to one in English composition based on a reading of the best authors. I think,—but I am content to leave the matter right there. (Applause.)

DR. HORACE M. WILLARD, of the Quincy Mansion School: It seems to me we have gone back about eleven years, and are discussing in the strain of a decade ago. If this Association has accomplished anything it has brought the colleges and preparatory schools together, and this has been due to mutual discussion on the part of the man-

agers of both. You know it has been the aim to keep the membership of this Association about equal in representation from the colleges and from the preparatory schools, with the idea that neither side should prevail over the other. That has had an excellent effect. The result has been that the secondary schools have lost largely, and perhaps entirely, the feeling that the colleges were inclined to override them. On the other hand, I think the colleges have met the preparatory schools in a very fair spirit, and I am sure that there is an understanding and fellowship existing that could not have existed but for this Association. Now I have found that the colleges are disposed and have tried to consult the interests of the secondary schools, and have had an influence in toning them up in many respects. If the work as done now throughout our preparatory schools were compared with that done eleven years ago all would agree that the work in English has made a decided advance. There is on the part of pupils of secondary schools a higher appreciation of English than of any other language. We have seen this state of feeling dying away, and we see now that the colleges are inclined to meet the secondary schools very fairly. I found this to be true this summer while preparing to open a new school. I wrote to our New England co-educational colleges and colleges for women and found that they were willing to treat me in my relation to this new school in the same way as when I was in public institutions. Only one college protested, and that was not in New England. Our own New England colleges met me in a very fair and square way, and I am disposed to say that we are in a very pleasant relationship on both sides.

MR. GEORGE I. ALDRICH, Superintendent of Schools, Newton: Unless by general consent I have no claim to a place on the floor, as I am not a member of the Association.

Chairman: The Association will be very happy to hear Mr. Aldrich.

MR. ALDRICH: I have found that only once in eleven years has the average age of pupils entering the Newton High School reached as low a point as fourteen and a half years. In this respect I suppose the school is not exceptional. These pupils have entered the high school knowing no mathematics save arithmetic, knowing no language save English, and knowing little or nothing of natural science. So

long as this remains the condition of entering classes I think we must agree with Dr. Parmenter that the demands now made by the leading scientific schools are about all that can be met. But is it necessary that boys and girls shall enter the high school with the limited equipment referred to? It seems to me not. In September 1893 the school board of Newton offered Latin as an elective to pupils of the three upper grammar grades. Somewhat earlier algebra was prescribed as the chief work in mathematics for grade nine, and nature study was incorporated with the work of all grades. I suppose it may be safely said that this Association looks with favor on such innovations. If these changes, however, are to be permanent it is essential that the influence of this and similar organizations be actively exerted in their favor. In the Newton grammar schools the work in Latin, algebra, and nature study has gone forward without interruption. It seems to be in no present danger, and yet we must admit that its continued security depends on the existence of a sound public opinion in the community which supports these schools. These innovations run counter to the prevailing tradition of what common school education should be. Even in a community so intelligent as the one referred to many individuals may be found who think these departures unwise. A great work is to be done in moulding public opinion before such grammar school enrichment as I have alluded to can be generally brought about. Who so competent to undertake this work as members of this and like organizations? Is it not true that in America we postpone too long the time of making rigorous demands upon pupils? It seems to me that the secondary schools have done all that can fairly be expected of them in meeting the advancing requirements of the higher institutions. Any further remedy must be applied earlier in the pupil's career. I do not suggest that school is to be made one unending grind, but I have little sympathy with the claim that children are overworked in American schools. Other causes may usually be found which account for the evil results attributed to overwork. During their first three years at school pupils should be chiefly occupied in gaining command of the three arts of reading, writing, and ciphering. So long, these are the ends to securing which teachers and pupils devote themselves. Subsequently these school arts, no longer pursued chiefly as *ends*, become the scholar's tools—the *means* of further acquisition and expression. Somewhat in the same way the grammar schools should put the pupil in possession of still other tools. We have long

and generally deplored the existence of a great chasm between the grammar and the high school. Is it not full time that this chasm disappeared? If it is to disappear, must not the first steps toward a liberal education be taken considerably earlier than has been customary in American schools? To achieve such result I am sure this Association may wisely exert its strongest influence.

With this the discussion closed and an adjournment was taken until evening.

FRIDAY EVENING.

The evening address was given by Dr. Alice Freeman Palmer of Cambridge, and had for its subject,

RECENT TENDENCIES OF EDUCATION IN FRANCE AND ENGLAND.

MRS. PALMER: In France the modern conditions of secondary and higher education date back little more than twenty-five years. In 1879 there was not a university library outside of Paris. As late as 1885 to no laboratory was more than $100 a year given to assist the professors in experimentation. There were many auditors, but few students or teachers; courses also were few in number and these of only one or two hours a week. The chief end of the professor's lectures was the writing of a book, and this in the hope of securing a call to Paris. Hence it happens that in this generation Frenchmen are discussing *de novo* problems which we discussed and settled long ago. The result of the break with tradition has been mingled good and evil. There has been much extravagant building under the republic. The Sorbonne has splendid buildings, decorated by great artists, but some of this money is badly needed in the students' laboratories. There are now in France 4000 students under fifteen faculties, receiving a non-professional higher education; they have good libraries at their disposal, a hundred supplementary courses of study.

The present is a period of great moral unrest in France. The nation is profoundly discontented and anxious, especially respecting religion, finance and education. Her young men go to Germany, to England, to America, and return bitter in spirit; everywhere they meet a scientific "Sedan."

In secondary and elementary education, Paris rules all. Everything is under the control of the central authority. All the boys and

girls of France, with her 38 millions of people, must be doing the same thing at the same time. Moreover, a multitude of subjects are crowded upon the boy and girl before the age of eighteen. The bane of the secondary school is the dull memorizing which prevails. The examinations, also, have become an enormous burden. England is helping France in the matter of out-door sports and exercises, but French mothers oppose the idea of *wasting time* on manly sports.

Most of the 4000 students already referred to, intend to be teachers on the reception of their degrees, which they can earn in one or two years. Science for its own sake attracts few young Frenchmen. The great teachers in the special schools for advanced studies have few students. In some classes are found a score of Swiss, German, or American students, but not one French youth. American students are now getting access to the great libraries of France, and find fewer restrictions than formerly, but professors and lecturers are still too few, they give too little instruction, and their salaries are too small.

While France is protesting against the tyranny of the state of education, across the channel England is asking for more help from the state. In England the question of education is well-nigh the foremost issue. The late discussion over the abolishing of the Board schools is proving of the utmost advantage. The result will certainly be larger grants for schools, and the organization of secondary education.

At the close of this address the members of the Association and their guests repaired to the reception room, where they spent a most enjoyable hour in social converse with the aid of refreshments. The arrangements for this social gathering were made by a committee consisting of Dr. John Tetlow, Dr. Samuel Thurber, and Mr. Edward H. Atherton.

SATURDAY MORNING.

The Association was called to order by President Seelye.

The Executive Committee reported a list of twenty-five persons who were nominated for membership. They were unanimously elected. Their names are as follows:

Gardner C. Anthony, professor in Tuft's College; James William Black, professor in Colby University; E. G. Bourne,

professor in Yale University; Homer C. Bristol, principal of Vermont Academy, Saxton's River, Vt.; Nathaniel Butler, president of Colby University; Elmer Case, teacher in Classical High School, Lynn, Mass.; Harold C. Childs, sub-master of High School, Brockton, Mass.; Joseph H. Coit, rector of St. Paul's School, Concord, N. H.; Caroline R. Fletcher, instructor in Wellesley College; Ruth Barker Franklin, teacher in Rogers High School, Newport; Charles S. Jackson, principal of the English High School, Lynn; Augustine Jones, principal of the Friends' School, Providence; Horatio B. Knox, teacher in Friends' School, Providence; Homer P. Lewis, principal of English High School, Worcester; Susan C. Lougee, associate principal of private school, Boston; John O. Norris, head master of Charlestown High School, Melrose, Mass.; Louis F. Snow, dean of Women's College, Brown University; Emily G. Somes, teacher in High School, Danielson, Conn.; Joseph R. Taylor, professor in Boston University; Eliza P. Underhill, principal of Rogers Hall, Lowell, Mass.; Charles F. Warner, master in English High School, Cambridge; Herbert S. Weaver, teacher in the Mechanic Arts High School, Boston; George F. Weston, principal of the Manual Training High School, Providence; Thomas Whittemore, instructor in Tufts College; Mabel E. Wood, teacher in Quincy Mansion School, Quincy, Mass.

The reports of the Secretary and Treasurer were received and placed on file. They were as follows:

SECRETARY'S REPORT.

The number of members in the Association, including the new members just elected, is 290, of whom 123 are from the colleges and 167 from the schools; of the members from the schools 75 represent the public high schools and 92 represent private and endowed schools.

Two votes of the Executive Committee passed within the year should be mentioned at this meeting for purposes of publicity and record.

In accordance with the vote of the Association October 11,

1895, the Executive Committee considered the matter of payment of salary to the Secretary and Treasurer, and fixed the salary at fifty dollars per annum.

In accordance with another vote of the same date, the Executive Committee appointed as delegates from this Association to the English Conference to prepare in joint session a list of books for entrance examinations in English subsequent to the year 1900 the following members: Dr. Frank A. Hill, Miss Mary A. Jordan, and Dr. Samuel Thurber. It was deemed best that the list of delegates should be changed in part at each appointment.

RAY GREENE HULING, *Secretary.*

TREASURER'S REPORT.

RECEIPTS.

Balance October 12, 1895		$158.90
Received from Assessments:		
1892–3, (1)	$1.50	
1893–4, (3)	4.50	
1894–5, (14)	21.00	
1895–6, (236)	354.00	
1896–7, (2)	3.00	
		$384.00
Total receipts,		$542.90

PAYMENTS.

Printing,	$138.47	
Postage and Stationery,	74.46	
Expressage and Telegrams,	9.41	
Stenographer and other aid,	44.21	
Salary of Secretary and Treasurer,	50.00	
Expenses Executive Committee and Speakers,	12.03	
	$328.58	$328.58
Balance October 9, 1896,		$214.32

RAY GREENE HULING, *Treasurer.*

President William F. Warren, for the Committee on Nominations, presented a list of officers for the ensuing year. They were unanimously elected. Their names are as follows:

President, Dr. Cecil F. P. Bancroft.

Vice Presidents, President Charles W. Eliot and Mr. Edward G. Coy.

Secretary and Treasurer, Dr. Ray Greene Huling.

Executive Committee (with the preceding), Dr. Horace M Willard, President Elmer H. Capen, President William DeWitt Hyde, Professor Frances E. Lord, Dr. Fred W. Atkinson.

Committee to confer with the Commission of Colleges in New England on Admission Examinations, Dr. William Gallager (term expires 1897), Mr. E. J. Goodwin (term expires 1898), George W. Rollins (term expires 1899).

Mr. Charles E. Fish presented the report of the Committee of Conference as follows:

BOSTON, MASS., October 10, 1896.

The Committee of the New England Association of Colleges and Preparatory Schools appointed to confer with the Commission of Colleges in New England on Admission Examinations appeared before the commission at its tenth annual meeting on the 6th of last April, and presented the resolutions framed by this Association at its meeting in Providence, October 11, 1895, in respect to requirements for admission to college in history.

A detailed account of this conference with the commission and a statement of their action may be found in the tenth annual report of the commission (pages 21–24). It is perhaps unnecessary in this report to do more than state the votes of the commission.

Voted:

(1) That the communication of the Committee of Conference of the New England Association of Colleges and Preparatory Schools be received and placed on our records.

(2) That the communication be transmitted to the colleges for their information, and that further consideration of the matter be postponed to the next annual meeting of the commission.

CHARLES E. FISH,
For the Committee.

MR. WILLIAM ORR, JR., of Springfield High School: During the summer Professor Charles S. Palmer, of Colorado State University, spoke to me concerning a movement looking toward the

regulation of admission requirements in science for colleges, scientific schools and institutes of technology. The entire question of science in secondary schools is thus involved. The National Educational Association has appointed a committee to take this matter under advisement, and similar action has been taken by the American Association for the Advancement of Science.

Professor Palmer expressed the wish that this organization would appoint a committee to act jointly with the representatives of the other associations. I would ask if any action has been taken.

THE CHAIR: No.

MR. ORR: In a matter of this kind due time should be given for a careful consideration of the persons who are to act on this committee. I therefore move that the Executive Committee be empowered to appoint a Committee on Scientific Courses in Secondary Schools and Requirements in Science for Higher Institutions, and that this committee shall confer with like bodies appointed by other associations.

The motion was seconded.

DR. FRED W. ATKINSON, of the Springfield High School, called the attention of the chair to the fact that the secretary, Mr. Huling, had some knowledge of the plan under consideration, and that he would doubtless be able to advise the Executive Committee. He was also desirous that action should be taken at one of the early meetings of the Executive Committee.

MR. CHARLES C. RAMSAY: I wish to inquire if the motion concerns admission to colleges or merely to scientific schools.

MR. ORR: The intention is that the committee shall take under consideration the entire subject of secondary science.

Motion carried.

Dr. Horace M. Willard offered the following resolutions which were unanimously adopted:

The New England Association of Colleges and Preparatory Schools, at its eleventh annual meeting, desires to express its appreciation of the very

efficient services of its secretary, Dr. Ray Greene Huling, and also its sympathy for him in his recent bereavement.

The members of the association, therefore, offer the following resolutions in testimony of their regard for Dr. Huling:

Resolved, That we extend to Dr. Huling our thanks for his long and faithful services, and that we assure him of our belief that to his untiring efforts in behalf of this Association its success is largely due.

Resolved, That we desire to express to him our heartfelt sympathy in his recent bereavement.

The Association then began the discussion of the subject especially assigned for the morning,

THE ENLARGEMENT OF OPTIONS IN ADMISSION REQUIREMENTS, WITH SPECIAL REFERENCE TO A CLOSER CONNECTION BETWEEN THE COLLEGES AND THE NON-CLASSICAL HIGH SCHOOLS.

Dr. John Tetlow, Head Master of the Girls' High and Latin School, Boston: Nearly two years ago this Association seriously discussed certain resolutions, which declared in substance that the satisfactory completion of any one of the four programmes of secondary school work recommended by the Committee of Ten ought to be accepted by the colleges and scientific schools as adequate preparation for admission to those institutions. Whether these resolutions, if they had reached a vote in their original form, would have been endorsed by the Association, and so would have gone to the several college faculties with the favorable presumptions which such endorsement would naturally have created, is of course uncertain. They failed to come to a vote in their original form owing, as is well known, to a protest made by the Greek departments of Harvard and Yale universities against the classical programme of the Committee of Ten.

The temporary success of that protest did not of course settle the main question at issue. It operated merely to postpone the settlement of that question. The real question before the Association was not "Shall the classical departments of the colleges begin their work with three years' study of Greek in the preparatory schools, rather than two, as a foundation?" but "Shall the non-classical courses of our public high schools lead

directly, and with no discrimination in favor of Greek, to college? That question, I repeat, was not settled, but was merely postponed. By the courtesy of the Executive Committee we are to resume the discussion of it today.

The arguments in favor of the affirmative view of this question need not detain us long, for they are practically undisputed, and their force increases year by year; but in any discussion of the general question they need to be stated. They are briefly these:

(1) A course of study that is intrinsically good for the secondary period of education is good also as a preparation for the higher education; or, to put the same thought in another way, a course of study that fits the pupil for life will fit him also for college.

(2) Many boys and girls not originally destined for college first come to a realization of their powers and aspirations near the end of their high school course of study, and that, too, as the direct result of the efficacy of that course of study in awakening to life their latent powers and aspirations. Such boys and girls are animated by a serious purpose, and will be a source of inspiration to those with whom they are associated in study; they have reached the stage of mental development and training that constitute the essential qualification for collegiate work; and they should not, by the unnatural prescriptions of a rigid scheme of admission requirements, be forced to spend an additional year, as they now are, in preparation for college.

Of the thirty-two young women who were graduated last June from Radcliffe College, the two who took their degree *summa cum laude* received their secondary training in this building. One was a graduate of the Girls' Latin School, a classical fitting school; the other was a graduate of the Girls' High School, a non-classical high school. The graduate of the Girls' Latin School entered college directly as a regular student with no embarrassment; the graduate of the Girls' High School was obliged to enter college as a special student and became a candidate for a degree only by means of embarrassing adjustments

made after admission to college. Both, as I have said, were graduated at the end of four years with the highest distinction, the former taking also final honors in the classics and the latter final honors in English. Could there be a more effective illustration or a clearer vindication of the essential equity of the claim I have just urged?

(3) The study of the classics is not an infant industry that needs to be fostered and protected by unjust discrimination against the studies that bring the student into intelligent and sympathetic relations with modern life and thought.

These arguments, as I have said, do not need to be pressed; they need only to be stated to carry conviction. Their force is conceded by the warmest advocates of the educational value of the study of the classics as readily as by the most ardent defenders of the claims of the sciences and the modern languages. In both classes of thinkers on educational questions there undoubtedly exists an entirely hospitable attitude of mind towards the affirmative proposition embodied in the question before us. The difficulty is rather a difficulty of adjustment than of principle,—a problem of programme rather than of abstract right. The question that presses for an answer is not "Is it desirable for the colleges and the non-classical high schools to be closely articulated, but is it feasible; and, if feasible, how is it to be accomplished?"

Two years ago, when we were discussing the resolutions to which I have referred, I felt very strongly that the solution of this question lay in the acceptance by the colleges of the completion of any one of the courses of study laid down in the programmes offered by the Committee of Ten.

There were many considerations which led me to this belief. Those programmes included a sufficient number of subjects, of the right kind and variety for secondary training, arranged in an orderly and progressive manner and having an adequate time-allotment; they had been constructed with the aim of securing to the individual pupil the maximum of profitable knowledge and sound training whatever the point at which his

progress through the secondary school might, for any cause, be interrupted; they postponed to the latest practicable point in the course the question of bifurcation; they were so interlocked as to secure, if carried out as parallel courses of study in a single school, the maximum economy of administration; and, besides these intrinsic merits, they had the happy distinction, which was itself a high recommendation, of being the composite product of the experience and thought of a large body of expert teachers selected from the two classes of institutions to be articulated and representative of all parts of the country. In short, the programmes were sound in subject-matter, progressive in order of sequence, capable of abridgment without wasteful sacrifice, adjusted to late bifurcation, and of quasi-national prestige and authority.

So obvious and so valuable were these features of the programmes that, in spite of the protest of the Greek departments and the consequent failure of the programmes to receive the endorsement of the association, one college in our membership, the College of Liberal Arts of Boston University, immediately recognized, and formally announced its willingness to accept, the satisfactory completion of any one of the courses of study provided in these programmes as adequate preparation for its courses. The bold initiative thus taken—and especially the hearty spirit of coöperation which it implied—merits grateful recognition at the hands of all who are interested in the promotion of harmonious and mutually helpful relations between the colleges and secondary schools. But the example so worthily and happily set has not yet been followed,—perhaps is not likely to be. If it had been generally followed, I am confident that the authorities of the non-classical high schools of New England would at once, in a hopeful and resolute spirit, have addressed themselves to the task of adjusting their courses of study to the changed conditions. Indeed, so convinced am I that practical advantages of the greatest importance would result from the close articulation of these schools with the colleges that I should be ready to accept any scheme of articulation,

whatever its source and, I had almost said, irrespective of its intrinsic merits, on which it should be found practicable for the two classes of institutions to unite.

But, as I have said, the scheme of articulation proposed two years ago has not as yet met with general acceptance, and postponement has given time for further reflection. The question therefore is still an open question, and the situation may still be viewed as one inviting suggestions. Indeed, the warmest advocates of the programmes of the Committee of Ten have never been so confident of their merits as to believe them perfect; and some of the most thoughtful and clear-sighted of their sponsors have openly pronounced them at the best temporary only. It cannot therefore be thought presumptuous for an interested student of the problem before us, taking the programmes of the Committee of Ten as a starting point, to try to construct a new programme for the non-classical high schools which, without mutilating their existing courses of study, will indicate specifically the directions in which options in the subjects required for admission to college need to be enlarged, in order to make possible the closer articulation at which we are aiming.

But, before proceeding to the work of making such a programme, let us consider briefly a few general principles which should be embodied in any programme designed for pupils of high school age.

In the first place, we must not forget that fully one-half, and probably a considerably larger proportion, of the pupils for whom we are making provision consists of girls; and that for girls the high school period is, for physiological reasons, a critical period. The evils that result from undue nervous strain during this period are apt to be felt through life. And not only are they permanent for the individual, but, through inheritance, they tend to affect the race injuriously. The mature men in this audience who were educated in mixed high schools and saw themselves outstripped in certain studies by girls, and the teachers here, too, from mixed high schools who daily get

from girls who lead their classes in these same studies recitations characterized by a delicacy of apprehension and finish of form that they despair of eliciting from the able boys of the same classes, do not need to be told that the girls who are worthy of the higher education, though more delicately organized physically and morally, are quite as ambitious as boys, and that they need the curb oftener than they need the spur. The relief that boys will get for themselves in spite of the exigencies of the school programme girls must have secured to them by means of the programme.

At the last meeting of the Harvard Teachers' Association, one of the speakers astonished me by saying: "We must rid ourselves of the trammels of the twenty hours per week fetish; the twenty hours per week must be exceeded; our young people are not working too hard; their intellectual efforts do not overtax them." Now I have taught girls of the high school age for the last eighteen years; I have observed in them the physical, mental, and moral effects of undue nervous strain; I have talked with many other observers of the same phenomena, and in particular with intelligent mothers; I have had daughters, too, and have therefore had an opportunity to pursue the laboratory method of investigation of this question under exceptionally favorable conditions; and I believe that I have the right to say with the authority of conviction that twenty recitation periods a week,—fifteen of prepared work and five of unprepared,—the standard embodied in the programmes of the Committee of Ten, is the maximum number of recitation periods for the secondary school age.

But let no one suppose that I am unconsciously furnishing materials for an argument in favor of separate schools for boys and girls of high school age. There are arguments that can be reasonably urged in behalf of separate schools, but that which I have just brought forward is not among them. Boys need the same consideration in school programmes that girls need, though happily they are not so defenseless as girls against the abuses of school programmes. The instinct which leads them to find an

outlet for their superabundant energy in athletic sports is a healthy instinct, and should be respected by programme-makers. I have taught boys as well as girls during my professional experience, and have lived long enough to see those whom I have taught become mature men. In many instances they have distanced me not merely in the ability to earn money, but in the kinds of mental and moral power which command my willing homage. From this experience I have learned that school training is not the only kind of training that tells, and that life in the outside world of thought and action is a still more potent factor in the development of mind and character. I have come to believe that we do not need to compress all the training subjects or all the training activities within the four years of a secondary school course of study. We can afford to wait for the experiences of life to complete the training that we only begin. Patient waiting in education is more efficacious than nervous hurry. Perhaps the German boy or the French boy of a given age does know more than the American boy of the same age. What of it? So far as this is due to defective courses of study and crude methods of teaching, let us by all means strengthen and enrich our courses of study and perfect our methods of teaching; but, as teachers, we are preparing our pupils for life in America, not for life in Europe, and the conditions of American life are not determined in the schoolroom or by the schoolmaster. We are confronted with a condition, not with a theory. Let us take counsel of practical wisdom, and not of philosophy alone. In the programme, then, which I shall suggest, the number of periods for work under the guidance of the teacher shall be limited to twenty; and it shall contain provision within that number of periods for some — I wish it could be much — regular and systematic physical training throughout the course. There shall be at least one period a week given to such training, and this period shall be divided into half periods occurring on alternate days; and, for relief from strain and the convenient exchange of classes, there shall be five-minute recesses between recitation periods.

Again, one of the strongest and most effective influences that can be brought to bear in the training of young people is the spirit which animates the school as an organic whole; and nothing contributes so much to the development and maintenance of the best spirit as a regular opening exercise of the right kind. I have heard students of one of our best colleges for women, where there is no such exercise—students who had learned by experience in the preparatory school to appreciate its value—deplore the lack of it.[1] There are present in this audience some of the teachers who at stated intervals assemble with their pupils in this hall for such an opening exercise, and I am confident that not one of them believes that the eight or nine hundred girls who take part in it could without a real sacrifice be deprived of its uplifting influence. The spiritual element must not be ignored in the school programme, nor must it be left wholly to the incidental suggestions of the substantial subjects of the school course of study. Now vocal music forms an essential feature of the kind of opening exercise that I have in mind, and some instruction in that subject—enough at least to make possible the intelligent and appreciative interpretation of simple concerted music of good character—shall be provided for in the programme I have to offer.

The subject of drawing nowhere appears as a distinct subject in the programmes of the Committee of Ten. By way of apology for the omission the committee say: "But the careful reader of the Conference reports will notice that drawing, both mechanical and free-hand, is to be used in the study of history, geography, and physiography, and that the kind of drawing recommended by the Conference is the most useful kind; namely, that which is applied to recording, describing, and discussing observations. This abundant use of drawing might not prevent the need of some special instruction in drawing, but it ought to diminish the number of periods devoted exclusively to drawing."

[1] The criticism here made is no longer applicable as the college referred to has recently introduced a morning devotional exercise.

Now drawing is a subject which, in my opinion, the authorities of high schools will not consent to eliminate from their programmes. I have heard Superintendent Seaver, who formerly taught mathematics in Harvard College, when speaking of that part of his professional experience, say that he could readily distinguish in his classes those who came from schools in which drawing was systematically taught from those who came from schools in which it received no attention. The former had acquired the free use of an added means of expression which the latter lacked. I have given to drawing four hours a week throughout the first year of the course, assuming that it will be taught there with due reference to the auxiliary use to be made of it subsequently in connection with the other studies of the course.

I have given scant recognition in the programme I have prepared to those parts of the programmes of the Committee of Ten which give three periods a week, for half a year only, to certain sciences, including meteorology, physiography, etc. My reason for this neglect is twofold: In the first place, it is difficult for me to see how these subjects can be treated as anything but information subjects as distinguished from training subjects if limited to the time allotted; in the second place, the want of a systematically ordered body of accepted knowledge in the departments covered makes them unfit material for purposes of secondary instruction. One member of the Conference on geography emphatically dissented in his report from the recommendations of the majority as to both subject-matter and method; and the majority used this language with reference to the present state of the materials and apparatus for teaching the subjects they recommended: "The scientific investigations of the last decade have made very important additions to physiographic knowledge and methods of study. These indeed are so radical as to be properly regarded, perhaps, as revolutionary Unfortunately they are not yet incorporated in text-books, in any large degree, nor are they, even in scientific treatises, collected into a form readily available for the use of the teacher

As yet they are widely scattered through various scientific publications. But this condition will doubtless be improved at an early date." Subjects that are in such a state of flux as this had better be allowed time to crystallize before they are incorporated in high school courses of study. Pupils trained on such material are likely, in the language of an American humorist, to "know too many things that are not so."

Without further explanation of the principles I have followed in the preparation of the programme I have to submit, I will now ask your attention to the programme itself. The periods contemplated in it are fifty-minute periods.

FIRST YEAR.

	Periods
English,	3
Algebra,	4
Latin or Modern Language (French or German),	5
History,	2
Drawing or Physical Geography,	4
Physical Training (2 half-periods),	1
Vocal Music,	1
Total,	20

SECOND YEAR.

	Periods
English,	3
Geometry,	3
Latin or Modern Language (French or German),	4
History,	2
Second Foreign Language (German or French),	3
Botany or Zoölogy,	3
Physical Training (2 half-periods),	1
Vocal Music,	1
Total,	20

THIRD YEAR.

	Periods
English,	2
Mathematics—Elementary Algebra; Plane Geometry,	4
Latin or Modern Language (French or German),	4
History,	2

THIRD YEAR—*Continued.*

	Periods
Second Foreign Language (German or French),	3
Physics or Chemistry,	3
Physical Training (2 half-periods),	1
Vocal Music,	1
Total,	20

FOURTH YEAR.

	Periods
English,	3
Physics continued, or Chemistry continued, or Astronomy, or Anatomy, Physiology and Hygiene, or Advanced Mathematics,	3
Latin or Modern Language (French or German),	6
History and Civil Government,	3
Second Foreign Language (German or French),	3
Physical Training (2 half-periods),	1
Vocal Music,	1
Total,	20

This programme, while differing somewhat in matters of detail, does not differ essentially from many programmes of proved excellence in actual use in the non-classical high schools of New England. It might be adopted without seriously disturbing either the theoretical beliefs or the mechanical adjustments which the satisfactory working of these programmes through a long series of years has established. It follows, too, in the main, the spirit and the general principles embodied in the recommendations of the Committee of Ten. Let us examine it briefly by subjects.

It provides instruction in two foreign languages, one ancient and the other modern, or both modern. The first foreign language has a time-allotment of five periods a week for the first year, four for the second and third years, and six for the fourth year; an arrangement under which, owing to the greater mental power of the pupil in the fourth year, as much can be accomplished as with a five-hour allotment for each of the four years of the course. This arrangement, moreover, makes the end of

the third year a natural point of division between the work involved in meeting an elementary and the work involved in meeting an advanced requirement in the language elected.

The second foreign language, which is begun under the advantage of the substantial linguistic equipment acquired through the study of the first foreign language five periods a week for an entire year, has three periods a week throughout the second, third, and fourth years of the course. In some schools this time-allotment would doubtless suffice for the work of both an elementary and an advanced requirement in a modern language.

Algebra has four periods a week the first year, plane geometry has three periods a week the second year, and mathematics, including the further study and final review of elementary algebra and plane geometry, has four periods a week during the third year. This time-allotment, with good teaching, should suffice for the requirements of the colleges in these two subjects.

Advanced mathematics as an elective subject, including, say, solid geometry and advanced algebra, or solid geometry and plane trigonometry, has three periods a week during the fourth year. This time-allotment should make adequate provision for the advanced mathematical requirements of the scientific schools.

English has three periods a week during the first, second, and fourth years of the course, and two periods during the third year. I believe a university in a neighboring state, during a temporary attack of nervous agitation superinduced by the report and facsimiles of the Committee on Composition and Rhetoric of the Overseers of Harvard University issued in 1893, announced its determination to receive certificates covering the English requirement from no school in which English was not taught as a distinct subject at least three periods a week for four years. But that legislation overlooked the fact that the true remedy for faulty written English lies not in increasing the number of periods allotted to English as a distinct subject, but in making every teacher of every subject responsible for accu-

rate and finished work in the English, both spoken and written, that belongs to his subject. That legislation, therefore, need not concern us here.

History has two periods a week for the first three years, and, combined with civil government, three periods a week during the fourth year.

Drawing, or physical geography, has four periods a week during the first year. This time-allotment, if drawing were elected, would enable the pupil to lay a good foundation for the auxiliary use of drawing in the subsequent study of other subjects. Physical geography, as a scientific subject of comprehensive scope and wide applications, may be viewed either as a fitting introduction to the several sciences that are to follow in the subsequent years of the course, or as perhaps the most widely applicable and therefore the most practically serviceable of the scientific studies for those who cannot afford to remain in school after the first year.

A biological subject, either botany or zoölogy, to be studied by the laboratory method, has three periods a week throughout the second year. This time-allotment, and the extension of the work over an entire school year, would make it possible for the pupil to study typical forms from the lowest to the highest in orderly sequence instead of such forms only as are accessible during certain months of the year, and so would enable him to get a general survey of the animal or vegetable kingdom as a whole and understand the relationship of the several groups.

Physics, chemistry, and astronomy all make their appearance in the programme at a point at which elementary algebra and plane geometry have been studied, so that both these branches of mathematics may be intelligently applied to the solution of such problems in these sciences as involve mathematical principles.

Anatomy, physiology, and hygiene come into the programme after botany, zoölogy, chemistry, and physics; and so, in conformity with the recommendation of the Conference on Natural History, may be studied as a science. The time-

allotment given to this composite subject, too, conforms, as that of the programmes of the Committee of Ten does not, to the recommendation of the same conference.

Assuming that the subjects which make up this programme afford suitable material for secondary training, that they are arranged in a rational order of sequence, and that they have each a sufficient time-allotment to give them adequate training value, how shall they be dealt with in determining the candidate's fitness for admission to college?

In the first place, are there any of these subjects that need to be studied for nutritive purposes or as a suitable foundation for subjects to be studied later, but that may be laid aside as practically completed at the point indicated in the programme, instead of being finally reviewed and lodged in the memory for examination purposes merely? It used to be the practice, as is well known, to examine candidates for admission to college in geography and arithmetic; but this practice has, in most colleges, long been discontinued. It has never been thought necessary to examine such candidates in vocal music, gymnastics, or drawing. Are there any subjects in the proposed programme which, in like manner, may with safety be passed over in the college admission examination, so that the pupil, instead of being forced to review them at the end of his course for use at that examination, may give his time to advance work on fresh material for further mental training? Obviously there are such subjects. The subjects pursued throughout the course for nutritive purposes that may safely be withheld from the list of examinable subjects are physical training and vocal music; the subjects which, as being studied in the first year of the course only, for their practical value to those who are destined to leave school early or for their value as a foundation for subsequent work in the case of those who are to remain throughout the course, are drawing and physical geography. Vocal music, physical training, drawing, and physical geography, then, may be withheld from the list of examinable subjects. Moreover, as the programme makes no provision for a final review of botany or zoölogy, I should exempt

these subjects also in part from examination, and should suggest the acceptance of certified notebooks as a sufficient guarantee of the kind and amount of work done in these departments. We must be careful in framing a scheme of articulation not to let the supposed necessity of a final examination in all required subjects tyrannize over us.

All the remaining subjects are either introduced late in the course or, after being introduced, are continued through the third or the fourth year; and, if they are studied, as they ought to be, with constant reference to the development of power as distinct from the mere acquisition of knowledge, they may, without sacrifice of their training value, and therefore with due regard to the interests of the pupil, be made a means of testing the candidate's ripeness for admission to college.

In a recent address before the Harvard Teachers' Association, President Eliot proposed, as the fairest means of determining the relative values of the different subjects required for admission to college, the proportion of time given to those subjects respectively by the candidate during his preparatory course. For example, if the total number of weekly periods in a given school programme for each of the four years of the course were twenty, making eighty year-week periods in all, and if in the same programme five periods a week in each of the four years were given to Latin, making twenty year-week periods in all, then Latin, having occupied $\frac{20}{80}$ of the pupil's time and effort, would have $\frac{20}{80}$ of the value of all subjects in determining his fitness for collegiate work,—in other words, in determining his admission to college. If, in the same programme, mathematics had occupied $\frac{10}{80}$ of the pupil's time and effort, mathematics would be credited with one-half the share of Latin in determining his fitness for admission to college.

For several reasons, which I will not stop to point out, this method of estimating relative values is not exact; but it is probably more nearly exact than any other that could be suggested; and, as a method on the whole fair and practically convenient,

it will probably commend itself to most persons as the best method that can be devised.

Applying this method of estimating values to the programme before us, we have, after eliminating vocal music, physical training, drawing and physical geography — the subjects which I have ruled out of the list of examinable subjects — sixty-eight as the number representing the total expenditure of time given to the subjects to be used in determining the candidate's fitness for admission to college. This number is made up of eleven, representing the time given to English; eleven, the time given to mathematics; nine, the time given to history; nine, the time given to science; nine, the time given to the second foreign language; and nineteen, the time given to Latin or the first modern language. It will be seen that the programme in question lends itself readily to a fair distribution of values among the several subjects or groups of subjects included in it. English, mathematics, history, science, and the second foreign language have practically the same time-allotment, and the first foreign language has almost exactly double that allotment.

In conclusion, let me say that I have no controlling partiality for this programme. Any other programme equally liberal in its treatment of modern subjects, including science, will satisfy me. The one thing on which my heart is set is that we reach in the present discussion a programme, reasonably flexible, that will put the graduate of the non-classical high school into sympathetic relations with modern life and at the same time secure to him, without prejudice or sacrifice of any sort, direct access to college.

PRESIDENT CHARLES W. ELIOT, of Harvard University: Let me first say a few words about certain details in this excellent programme. It seems to me, in the first place, that the time devoted to linguistic studies is excessive in comparison with the time devoted to scientific studies. Adding together the hours devoted to languages, we find that they amount to thirty-nine out of eighty, and that all these thirty-nine hours are prescribed for the pupil. Adding together the prescribed hours devoted to science, we find only six. There are a few

more hours for which the pupil has options. Thus, the pupil may avoid physical geography by taking drawing; and he may avoid another science by choosing advanced mathematics. Since the advanced mathematics are not attractive, it is probable that one of the sciences would be chosen in the last year. So nine hours might be given to science against thirty-nine given to languages; and there is a possibility that only six hours would be given to science. This seems to me too small a proportion for those subjects on which we must rely to develop the powers of observation and of accurate inference from observed facts. This objection to the programme before us seems to me somewhat serious.

There are some other less important features of the programme which are not attractive to me. Thus, the incorporation of drawing and physical training into the programme of a secondary school has always seemed to me unnecessary. I know that they commonly appear in high school programmes, and are subjects which commend themselves to parents and school committees. It may be expedient to insert them formally iu a high school programme — on that question I should defer to Mr. Tetlow's experience. To me, however, they do not seem in place in a weekly programme of lessons. Unquestionably, some time ought to be devoted to physical training in a secondary school every week; but twenty periods of forty-five minutes each do not exhaust a week of school time. In most urban systems there are twenty-four or twenty-five hours of school time in the week; whereas twenty periods of forty-five minutes each make only fifteen hours. It has been my belief that physical training and vocal music, like recesses and laboratory work, ought to be provided for in that balance of nine or ten unassigned hours. Those of you who have read the report of the Committee of Ten will remember that several of the conferences urged strongly that drawing should be begun early in the elementary school course. Indeed, we now begin drawing in the kindergarten. Pupils should therefore have made large progress before they reach the age of fourteen. If drawing has been faithfully taught in the elementary schools, and if in the secondary schools drawing is used in connection with the instruction in the sciences and in history, it seems to me that the assignment of specific hours to this subject in the programme of the secondary school will be unnecessary.

Mr. Tetlow seems not to favor in this programme the study of geography. No one can be more averse to the study of geography in

the old-fashioned way than I am. Memorizing the names of mountains, rivers, gulfs, and straits, the populations of different countries and cities, and the boundaries of states, is one of the most useless mental exercises that ever got firm footing in the American school system; but it seems to me that Mr. Tetlow undervalues somewhat the recent progress made in teaching geography. Mr. Frye's geographies show what can be done in the way of eliminating rubbish and introducing valuable material. We need no longer maintain that geography is inevitably a barren subject. The means of teaching geography other than books are also much better developed and understood than they were ten years ago. Inasmuch as geography and physiography connect and bring into comparison the elements of several different sciences relating to the crust of the earth and its living occupants, both vegetable and animal, it seems to me that geography should find a place in the secondary school programme as a scientific subject, dealt with in a scientific method.

These are all the points on which I shall venture to suggest criticisms in detail on this interesting programme.

The broad question which Mr. Tetlow spoke of first is of the highest interest to the cause of education—How can the non-classical schools be brought into closer connection with colleges and universities? No more important educational question confronts us. In the first place, the secondary schools supported by public taxation are much more numerous than the endowed schools and private schools taken together. Secondly, they must unquestionably be regarded as permanent parts of the American school system, and not temporary or provisional parts. They are going to continue to be the last school of the great majority of boys and girls whose education can be prolonged to the eighteenth or nineteenth year. Whatever promotes the welfare of these schools promotes the welfare not only of colleges and universities, through the comparatively small proportion of secondary school pupils who go on to colleges and universities, but also of that great majority who never reach the higher institutions of learning. This is a matter of permanent interest to the great majority of American children whose school training is prolonged beyond the fourteenth year. By establishing a close connection between public high schools and colleges the public high schools would be greatly strengthened, because their programmes of instruction would, in consequence, be enriched and their methods improved, to the immense advantage, not

only of the minority who go on to college, but of the great majority who do not. The problem stated by Mr. Tetlow is therefore one of permanent interest and importance.

Up to this time in American education we have had to admit that the programmes of secondary schools supported by public taxation have, as a rule, been inferior to those of the classical preparatory schools supported by endowments or tuition fees — inferior in the selection of the subjects taught and in the mode of dealing with the selected subjects, and therefore inferior in power-giving results. Several reasons might be assigned for this inferiority. The public schools have generally been directed by elected committees, who were not so well acquainted with education in general, or the needs of secondary schools in particular, as the members of college and university faculties, whereas the endowed and private schools have generally been under the influence of the higher institutions of learning. Again, information subjects have been permitted to occupy much space in high school programmes to the exclusion of training subjects. Furthermore, they have been recruited from the grammar schools or grades; and the pupils in these lower schools have been cut off, up to fourteen or fifteen years of age, from important subjects which the more fortunate pupils of endowed and private schools have had access to. Lastly, the high schools as a class all over the country, not being well enough equipped to prepare their pupils for admission to colleges and universities, have prepared them for an inferior class of institutions,— namely, the scientific and technical schools. In some large cities and towns there have been high schools competent to prepare their pupils well for colleges and universities, but these schools have been distinctly exceptional. The scientific and technical schools, which since the land grant act of 1862 have become rather numerous, have actually undermined the good high schools by setting so low a standard of admission that the pupils of a good high school found themselves admissible to a scientific or technical school a year, or even two years, before they had finished their high school course. This process has been going on in increasing proportions for more than a generation, and has been very demoralizing to public secondary schools. I base my statement that the scientific and technical schools are inferior to the colleges on the one fact that they have always and everywhere had a decidedly lower standard of requirements for admission than that of the colleges; and I am bound to say explicitly that

the Lawrence Scientific School of Harvard University is no exception in this respect among scientific and technical schools. It has been distinctly inferior to Harvard College, because it has prescribed much lower requirements for admission. The admission requirements of any institution determine the grade and quality of its first year's work; for they practically determine the nature of the preparation which the young men admitted to the institution have received. However good may be the work done within the institution itself, the initial inferiority which depends on lower admission requirements cannot be overcome.

One partial remedy for these evils is to put public high schools in connection with colleges and universities. Another remedy would be to lift scientific and technical schools to a level with the colleges in regard to their requirements for admission. Notice has already been given by one American university — namely, Cornell — that this last remedy is to be there applied. Cornell has from the beginning maintained several courses of study in arts and sciences which led in four years to different degrees; and the requirements for admission to these several courses have been very unlike in amplitude and difficulty. The faculty and trustees of Cornell have now given notice that they mean to raise to the same level the examinations for admission to all these courses,— not that the subjects of examination are to be altogether the same for the different courses; but the total examination for admission to any course is to be the equivalent of that for admission to any other course. They further announce that, when they have thus leveled up the examinations for admission, they will give one and the same degree for all the different courses in arts and sciences offered by Cornell University, and that this uniform degree will be the degree of A.B. Here we have a thorough remedy for some of the chief evils under which high schools have labored, and in my judgment it is the only thorough remedy. We need to have the admission examinations at the higher institutions of learning leveled up, while wide options as to subjects are permitted, so that pupils of different capacities may not be obstructed in their progress, and secondary schools of different tendencies may retain their freedom. What fundamental principle is clearly involved in this recommendation? It is the recognition that English, the modern languages, history, and the sciences can be made in secondary schools the vehicle of just as substantial a training for the human mind as Latin, Greek, and mathematics. Towards that

recognition immense progress has been made within my recollection, and great progress has also been made in developing successful methods of teaching the new subjects, methods which make them as valuable training material as the traditional subjects. When we have recognized the equal value of all these subjects, new and old, and have learned how to teach them all with equal efficiency, we shall find that there are too many subjects for any one youth of eighteen to compass. We must therefore have options, and wide options, in admission requirements. The Lawrence Scientific School has prepared a scheme for raising its admission requirements step by step during four years, a scheme based on wide options and a valuation of subjects fixed by the time allotted to them in good secondary schools. Such I believe to be the next advance which we may expect to make in the relations between the secondary schools and the higher institutions. The higher institutions should recognize as good material for mental training a larger variety of subjects than they have heretofore recognized; and they should then widen the options at admission examinations, and allow any subject which is taught with thoroughness in good secondary schools to count towards admission in proportion to the time allotted to it in the programmes of the schools. When these improvements have been brought about, I believe but one bachelor's degree in arts and sciences will be given by the higher institutions,—namely, the degree of A.B.

This, ladies and gentlemen, will perhaps answer as an introduction to the discussion.

PRESIDENT ELMER H. CAPEN, of Tufts College: I desire to present the following resolution and to move its adoption:

"Resolved that the high school course of study offered by Dr. Tetlow in the main commends itself to this body as an adequate and satisfactory means of preparation for collegiate work, and that the Conference Committee be requested to bring it to the attention of the Commission of Colleges on Admission Examinations, with a view to the adoption of some such course by the colleges of this Association as a basis for the enlargement of options in admission requirements."

I do not care to take up time in extended discussion of my motion. Mr. Thurber yesterday afternoon interjected an argument which he modestly called *obiter dictum*. I do not think it was that yesterday, but if he had waited until this morning before making the

argument it certainly would not have been *obiter dictum*. His position was that the preparatory schools, so far as the people are concerned, are an end in themselves and do not exist with reference to the colleges. I do not think that is exactly the truth. If you will look at the legislation creating the high schools you will see that the framers of that legislation contemplated preparation for college. Neither do I think the people regard these schools as an end in themselves. Not only are many of the students in the high schools predestined from the beginning for college training, but many as they near the end of their course fix their eyes with determination upon the higher institutions. In the English high schools it is indeed true that the great majority of pupils cease their formal training with their graduation. Yet there is a large percentage who in their fourth year hunger for something more. They would like to have a more thorough and complete training. What is their resource? The general practice has been for them to seek the technological schools. As President Eliot has pointed out with reference to Cornell, if they fail in one course they take another until they come to the bottom of the list rather than give up altogether the opportunity for more extended training. It often happens that the pupil who has been trained in a high school is able to get into the scientific schools because he has been trained for the admission examinations; but as he takes up the work he finds that he has no aptitude for the subjects which are specialized in those schools. He drops out then through failure of ability to deal with the subjects required. It has certainly raised the question with us at Tufts College, whether we should not make larger provision for that class of students, so that they can get general and not specific training, training which their own aptitudes and tastes lead them to seek. As President Eliot says, this is the next step, and as Dr. Tetlow says, the condition is such that those who are engaged in advanced education ought to see what are their duties towards the youth of the land who are struggling for a higher education. I for one am thoroughly convinced that the subjects which are laid down on the programme presented to us this morning by Dr. Tetlow, if studied in a substantial way and the work thoroughly done, are just as valuable a training as the traditional subjects; and the time has come when the high schools should recognize themselves as part of the great system of higher education. They must place high ideals before their pupils at an early stage and keep them there.

MR. BRADBURY: It is with the greatest possible diffidence, of course, that I rise to address you after hearing the speakers who have preceded. I had no thought of saying a word. I have, however, a few points which I should like to make. Of course one does not like to differ from Mr. Tetlow; his words are so clear, so distinct, so well considered that they carry conviction almost inevitably. I differ from him with regret, but I differ from him nevertheless. With reference to the two girls who graduated from Radcliffe last year, to whom Mr. Tetlow referred, it is possible that I have drawn the wrong conclusion, and you also may have been misled by his remarks. He said that two girls, one from the Boston (Girls') Latin School with a classical preparation, the other from the high school, graduated from Radcliffe with *summa cum laude*. The girl with the classical preparation entered college clear and unconditioned. The other entered handicapped by annoying conditions which she must remove later. The conclusion I drew was that Mr. Tetlow thought that the one who entered handicapped with conditions ought to have entered clear; another inference which I drew, perhaps unjustly, was that Mr. Tetlow thought that Radcliffe College had done an injustice to this girl who entered from the high school,— that she ought to have entered clear. I do not think that these opinions, if he holds them, are warranted. The probability is that this girl was not prepared according to the requirements, and that she ought to have been conditioned. Why then should she receive a *summa cum?* Because she was smart, she was able to do the work; she was not only able to do her work well, but in addition to work off her conditions. Many a boy does the same thing; he enters Harvard College handicapped with entrance conditions and makes them up, and perhaps leads his class in addition. Perhaps if this girl had entered clear she would not have received a *summa cum*.

With reference to the programme which Mr. Tetlow has so ably defended, I do not suppose there is a college in America that would refuse to accept this programme after it is properly put into execution; for the studies that are named here, if a boy is prepared to enter college, are just as good for him to enter on as any others. But will he be prepared with this programme? Look at the Latin! Is there enough time allowed for it? Perhaps; a smart boy can do it; but as a matter of fact the Cambridge Latin School has difficulty in getting whole classes over the line, I mean in quality as well as quantity, on the programme now in operation there. I do not believe that in the

time allowed here [pointing to the programme on the platform] it can be accomplished except in the case of those who are keen and smart. The fact is that this programme will not fit for Harvard College or Radcliffe College. There is not enough time allowed for Latin. There is *no* Greek. Of seventeen hours required for admission to Harvard and Radcliffe the Greek covers five. The fact is, there is a whole year's work to be done after the pupil has finished this programme in order to enter Harvard or Radcliffe.

President Eliot has said that a college that has an inferior standard of admission is an inferior institution. I think that is true. Now if Harvard and Radcliffe will take off a year from their admission requirements, if they will come down from the position which they have taken, then this programme might work; but *will* they? No! I believe on the contrary they will try to get others up. President Eliot has not said that pupils can enter college on this programme. Boys have gone from my fourth class to the Institute of Technology; but after they get there they have to work or die. They admit three hundred to the freshman class; but how many do they graduate? Comparatively few. That also is the trouble with the Lawrence Scientific School. As President Eliot has said, this condition has been a serious injury to the preparatory schools. And it has also been a serious injury to these schools that a boy could get into Harvard as a "special" without knowing *much* of anything.

It is a very easy thing to say in a catalogue that this college requires more than any other college, but it is sometimes very easy to get a boy into such an institution. One thing about the scientific schools is that they require more on paper than they exact in practice. I wish the scientific school would not only *demand* more but *actually require* more in practice.

About this programme, it cannot be worked out mathematically. Latin, six hours a week; how can you get these six hours into a week of five days? The pupil must have *two* hours recitation one day in Latin in every week. Who will hear that extra Latin? You can do one thing in Boston that we cannot do in Cambridge. We cannot give vacant hours to our teachers as you can in Boston. I cannot see how you can put this programme together and work it out mathematically with the forces at your disposal. What is going to be done with the *four* hours of Latin a week? What comes of the fifth hour each week? You say a vacant hour. That is all right if you can get a vacant hour.

DR. JOHN TETLOW: I was surprised to hear President Eliot's criticism of the programme; it was so unlike him. (Laughter.)

Most of the candidates for admission to Harvard College enter with physics as their only science, and preparation in that requires only four hours a week for one year; the required six hours of the present programme are at least better than four. But I have never heard President Eliot count hours in a programme in that way before. (Laughter.) He has been an apostle of the elective system for the past twenty years; and, according to his usual way of counting, which credits a programme with what it permits rather than with what it compels a student to take, the programme before us provides for thirteen hours of science instead of six.

Again, in Harvard College the only requirements imposed on the entering student are that he shall take English, and that he shall take French if he enters with German, or German if he enters with French. In other words, the only requirements imposed are language requirements. The student can go through Harvard College without any science whatever; and in Radcliffe College that is what the young women, or the majority of them, are doing. It has been all that I could do, and it has been almost more than I could do, to get my own daughters to take any scientific courses there. The Radcliffe students wish to take, and they insist upon taking, because they are permitted to do so, those courses which to them are the most attractive; and in doing this they almost invariably omit the sciences. President Eliot will pardon me for pointing out the superiority of the present programme to that of Harvard College; I was prompted to do so by his inconsistencies of interpretation. (Laughter.)

PRESIDENT ELIOT: I am in favor of the elective system; indeed I have been a somewhat persistent advocate of it for nearly thirty years. What suggested to my mind doubts about this particular application of an elective system was the fact that in this programme the election takes effect in science, but not at all in the languages. The programme is elective on one side only. I advocate a universal and impartial elective system.

MR. EDWIN P. SEAVER, Superintendent of the Public Schools of Boston: I wish in the first place to express a very natural personal gratification in seeing that Mr. Tetlow, in his paper today, has taken

substantially the same ground which I took some twenty years ago. He will permit me to remind him of a paper, which I read before the Association of Classical and High School Teachers in which I endeavored, as best I could, to prove that a boy prepared by a thorough course of study in English, mathematics, physics, chemistry, French and German might and ought to be admitted to college as a candidate for the degree of Bachelor of Arts. I wrote as good a paper as I could; but, when I had read it, Mr. Tetlow rose and knocked my argument all to pieces. Now, I am pleased to see, he advocates the same doctrine which I then endeavored to maintain.

Now, a word as to the adequacy of this programme to fit boys for Harvard College. This programme has a very close family likeness to that in actual use in the Boston schools today. You would need to put in a little bookkeeping, possibly some other things in small amounts, though I do not think of any. At any rate, with very slight additions and alterations, you might have the identical programme now in use in the English High School. For several years past, boys in the English High School, under Mr. Babson, and his predecessor, Mr. Waterhouse, have been prepared for college. The regular course in this school is three years long, after passing through which boys are admitted for a fourth year to the Advanced Class. From that Advanced Class boys have been admitted to Harvard College, not through the scientific school, nor through any other byway, but by the highway. Therefore, it appears that this programme has given sufficient preparation for Harvard College, and that it has done so for several years past. I think I can safely call upon President Eliot to testify that some of the boys so prepared in the English High School have taken good rank in their classes, and that they have even graduated with high honors.

There are some details, it is true, that I should criticise if this programme now before us were up for adoption. I should, for example, omit physical geography as being, in its elementary stages, a study more fit for the grammar schools. I should prefer to extend the drawing through two years, thus bringing botany into the third year, and physiography (which is a new-fashioned name for physical geography and may here be taken to denote the advanced stage of the subject) into the fourth year. Physiography is not a science in and of itself. It is the sum of several sciences and a good introduction to it consists in the previous elementary study of these sciences. Physiog-

raphy would better come, therefore, in the fourth year. But that is a mere detail. In the main this course has been found sufficient for admission to college and the boys admitted upon it have not found themselves handicapped. I suppose the instance of the two girls, mentioned by Mr. Tetlow, affords a good example of the advantage which still adheres to the old classical course. The girl who entered college without Greek suffered inconveniences which the college ought to have removed, and for which the school was not at all responsible; but the two girls went through college with equal success because they were in reality equally well prepared; the one with Greek and the other without Greek in her list of studies. They ought to have found their ways equally clear of unnecessary obstructions.

The way to apply the elective principle seems to be this: Let well-defined courses of study be laid down, one in English language and literature, one in Greek, one in Latin, one in French, one in German, one in mathematics (including algebra, geometry and trigonometry), one in physics (occupying about what is now required for admission to Harvard College), another in chemistry (defined in like manner with the physics), one in history, and, I would add, one in mechanic arts. These courses should be carefully defined as to the number of hours a week and as to the number of years they were to occupy for their completion. They should also be carefully defined as to contents and as to the degree of proficiency which might fairly be supposed to result from the pursuit of them. For the purpose of entering college no candidate would offer all these courses, but every candidate would offer as many and such ones as the college might require. If a college should say that Latin must always be one of the courses offered for admission, the schools could govern themselves accordingly. If the colleges were ready to say that modern languages, French and German, would be accepted instead of Latin and Greek, the schools could govern themselves accordingly. Moreover, it is probable that no one school would undertake to teach all these courses. The classical schools would, of course, continue to teach Latin and Greek and mathematics as heretofore. The high schools, making a different selection of courses, might still prepare candidates for college, provided the colleges were willing to accept a different selection. The course in mechanic arts ought to be accepted as one course in preparation for the scientific schools.

I suppose these details could be worked out by negotiations

between the authorities of the colleges and those of the schools. The colleges are rapidly finding out that the boys who are graduated from the English high schools of the country are desirable students, and that it is for the interest of the colleges and for the interest of higher education that the college doors be opened to these students. Formerly there was but one road to college and well-paved road lay through Latin, Greek, and mathematics; now we have blazed a way through the woods, and those who are prepared in modern languages, mathematics, and the sciences can enter college by a new road. It is not so easy or short a way as the old road perhaps, but it will improve with time and use.

DR. FRANK A. HILL, Secretary of the Massachusetts Board of Education: I have observed that no reference has been made in the discussions of this Association thus far to the relation now existing between the normal schools of Massachusetts and the high schools. Until recently there were no relations between them worthy of mention. Previous to 1894 the normal schools admitted pupils directly from the grammar schools as well as from the high. In 1894 graduation from a high school or an equivalent education was for the first time insisted upon as a prerequisite for admission. Candidates in that year and also in 1895 were permitted to take an examination either in high school subjects or in grammar school subjects, as they elected. They generally chose the latter.

In June and September, 1896, for the first time in the history of our Massachusetts normal schools, for the first time, I may say, in the history of the normal schools of the United States, candidates for admission were required to pass examinations in high school subjects.

To the colleges and high scientific schools, therefore, we must now add the normal schools of Massachusetts as institutions whose influence should be exerted for good upon the high schools below them.

Does anyone question the importance of the relations between the normal schools and the high schools? Here are a few figures to show the numerical extent of those relations: In 1893 our Massachusetts high schools sent 1031 graduates to higher institutions, 243 of them to normal schools, 213 to scientific schools, and 575 to the colleges. In 1894 these same schools sent 1143 graduates to higher institutions, 300 to normal schools, 260 to scientific schools, and 583 to the col-

leges. Almost as many graduates, it will be noted, enter the normal and scientific schools each year as enter the colleges.

In order of difficulty and in potency of influence, the demands of the colleges, particularly of Harvard, upon the high schools undoubtedly rank first; the demands of the scientific schools, next; and just at present the demands of the normal schools, last; but ultimately all these institutions ought to be working harmoniously together in what they ask from the high schools; and they should do this not merely for their own good but for that of the high schools and the public schools in general.

We have in round numbers about 35,000 boys and girls in the high schools of Massachusetts, twice as many as we had fifteen years ago. It is a generous estimate to say that only 5000 of these pupils are consciously preparing themselves for higher institutions. The remaining 30,000 are pursuing courses of study that do not connect with the colleges above, courses that ought to be abandoned if they are intrinsically poor, that ought to connect with the colleges if they are intrinsically good. Now it stands to reason that courses of study suitable for 30,000 boys and girls whose schooling is to stop with the high school ought to be suitable to continue in the colleges or, at least, to admit to the colleges, if a late ambition prompts any to go there. Certainly these courses ought to be dignified by giving them a better standing and by encouraging in them more thorough work.

It is of mutual educational importance that the people shall keep in touch with the colleges and that the colleges shall keep in touch with the people. Certainly something like this is due to the people who have, at great expense to themselves and often to the detriment of the larger number in the non-preparatory courses, kept open the slender but costly classical courses that lead up to the colleges, constantly varying these courses to meet college demands and planning for their own demands in separate courses.

Another matter: We speak sometimes slightingly of the humble demands which the scientific schools are making on the high schools. It must not be forgotten, however, that the scientific schools are new and that they draw their pupils very largely from the popular courses in which instruction has not been so well developed as in the classical. The scientific schools — the Institute of Technology, in particular — are steadily working up to higher planes of admission requirements. The normal schools, while they must, in the nature of the case, continue

to rely on admission subjects substantially the same as those now published, will steadily insist on improving qualifications in these subjects.

As to Mr. Tetlow's programme, I am pleased to see the spirit that runs through it to pursue subjects with thoroughness and for a sufficiently long time. From the standpoint of the normal schools, however, I note one or two difficulties. Normal school candidates need for admission both physics and chemistry, but I do not see how the programme provides for the study of both to advantage. They need in addition physical geography, physiology, and botany. Here are five sciences, all statutory subjects in Massachusetts, all needed by teachers in the elementary schools, all taught in the general courses of our better high schools, and all recognized in the programmes of the Committee of Ten. Why should not the colleges give them all a standing among their admission requirements? Such liberal recognition would promote two desirable things: (1) the bridging of the chasm between 30,000 boys and girls pursuing the general courses of our Massachusetts high schools and the colleges above them; and (2) greater thoroughness of instruction for these 30,000 pupils,—a thoroughness that is sorely needed whether they go higher or not.

MR. WILLIAM C. COLLAR, of the Roxbury Latin School: This discussion belongs mainly to the teachers of the high schools and the teachers of the classical schools should not occupy very much time. I rise to say a word on the motion. I think such action as is proposed would be premature. I do not think that Dr. Tetlow anticipated that the Association would take such action, and I doubt if he would desire it. I think it would be better to lay the motion on the table until the next meeting. I do not want to vote for it, and I should not like to vote against it, and I am unwilling to abstain from voting. The programme seems to be drawn up, as is natural, in view of the present requirements for admission to colleges. It is certainly true from the number of subjects that boys must take, if they take a preliminary examination, that we must disperse our teaching, and that is the vice of this programme. Boys who go up from my school cannot be allowed to go up with only five hours, they must have a margin. They go up in four foreign languages: elementary Latin, elementary Greek, French and German, with algebra and history. Now it is very embarrassing, and a great educational mistake, for boys, a year before they go to col-

lege, to be obliged to take all these subjects at once. All my boys take French for three years. After the first, second, and third years it will not do to omit it the fourth year when they are going up to take their preliminary examinations; and the same may be said of history and German. What is needed is more concentration. That can be brought about if the colleges will give another preliminary or previous examination. As it is, pupils go up without ever having had a serious examination from any outside authority before the age, say, of seventeen or eighteen. Now what a work Harvard would do if it would have a previous examination, that is, examine boys a year earlier in what subjects they might offer. It would bring the influence of the colleges to bear upon the schools a year earlier. Boys do not care, under the present system, at that period of their preparation, much about study, and the examination is too remote to affect them.

I wish to thank President Eliot for one word that he has uttered which I shall often quote. He says the technical schools often receive pupils from the second year of high schools and so undermine the high schools. In the very same way the colleges are undermining the classical schools. Harvard College is undermining my school in just that way. No certificate is required from me for final examinations, and it is no uncommon thing for boys to go to college from my second class. Harvard drew from my second class this year the best scholar and one of the poorest. (Laughter.)

PROFESSOR ALPHONSE N. VAN DAELL, of the Massachusetts Institute of Technology: In the absence of General Walker and my colleagues of the technical departments of the Institute, I will say a few words in defense of our school. I believe President Eliot has judged it, and other technical schools, too much by the standard of the Lawrence Scientific School. The latter has received repeatedly students who had been advised to leave the Institute of Technology, and had been dismissed without a clean record. It is true that among them was one who obtained great distinction on both the baseball and football teams of the university.

Our entrance examinations in both French and German are notably harder than the corresponding elementary examinations of Harvard College, and, if I am well informed, the same thing is true of our mathematical examinations.

Mr. Bradbury's remark that a boy enters the Technology only to die

there, is the repetition of a popular error. A man who is not handicapped by an insufficient preparation or poor health has nothing to fear at the Institute if he will do faithfully his work day by day. The records will prove that to the satisfaction of all who care to look into the matter.

I notice that in Mr. Tetlow's programme six hours per week are assigned to a modern language during the fourth year of the course. That is more than I would dare to claim for this subject, while I feel sure that my colleagues of the mathematical department will find the number of hours given to them entirely insufficient. We require now advanced algebra or solid geometry; both may soon be demanded, and there may be a question about going even further, so as to include trigonometry. The time allotted to mathematics in this programme seems inadequate, if we remember that it should allow (as an option) full preparation for a scientific course.

DR. HARRY W. TYLER, of the Massachusetts Institute of Technology: I regret that the scientific schools are not more fully represented in this morning's session, but I may be permitted to add a few words to what has just been said by Professor van Daell. I must confess that I was surprised at a previous meeting of the society to hear the statements made in regard to the inadequacy of scientific school requirements. I have been more surprised that they should be repeated this morning. Unfortunately, I am not well acquainted with the work of the Lawrence Scientific School, but I do know the Institute of Technology, and I have had occasion to study to some extent the entrance requirements of other scientific schools throughout the country. So far as the Institute of Technology is concerned, I can say emphatically from ample evidence that, whether students can or cannot enter after two years in the high school, as a matter of fact they do not. There are a few schools in this vicinity, for example, the English High School and the Mechanic Arts High School, which send us students from three-year courses. Beside these, practically all students coming from public high schools have completed four-year courses, and are, even then, not too well prepared.

As to scientific schools in the country at large, the results of the committee work referred to yesterday afternoon indicate that four-year preparation is general, and that little, if any, advance in entrance requirements of scientific schools could be generally met. I am not

disposed to maintain that scientific schools are not open to criticism in the direction in question. I must insist, however, that the criticism has been greatly exaggerated. If we, at the Institute of Technology, had to choose between the alternatives of easy admission and difficult graduation on the one hand, and of difficult admission and easy graduation on the other, we should not hesitate to prefer the former.

MR. CHARLES C. RAMSAY, Principal of the B. M. C. Durfee High School, Fall River, Mass.: I sympathize with Dr. Hill in the desire that the general courses of study in public high schools become more dignified; but it seems to me that these schools must themselves dignify these general courses of study. And this can be done by making them stronger and more thorough, by making them of equal weight and severity with the regular college preparatory course. If we should ask the colleges to accept these general courses as adequate preparation for admission we must make them adequate for this purpose. The great work on our part is to make these general courses sufficient. We are not here as mechanics simply to adjust; but we are here, I trust, rather in the interests of sound education, and the way to be sure of furthering sound education in our demands today is by asking the colleges to enlarge options that are really equivalents one of another. We must not ask that a combination of scraps of subjects be accepted as an equivalent of a single substantial subject, like Latin, for example. As far as is reasonable and possible we must — by better methods of teaching and by giving to each equivalent equal amounts of time — make single subjects real equivalents of one another. In the interest of sound education I am anxious for the time to come, and I expect the time to come, when the colleges and scientific schools shall not only permit but encourage the secondary schools to teach English, French, German, history, mathematics, and science four full school years, with as many exercises a week as are now given to Latin and Greek. By this statement I do not mean that every preparatory school shall be expected to give instruction in all the branches named and to the extent named. I mean rather, for example, that if a school teaches history it may and should devote four full school years to it. Let every school determine, in accordance with its facilities, which branches it will teach; but after the choice has once been made let the school give the very best and fullest instruction, as compared with

other preparatory schools, in the branches chosen. And let the colleges and scientific schools allow wide options in the admission examinations between real and substantial equivalents, and thus give to the secondary schools full credit for their maximum work in every subject in their curricula, even when pursued—as every study may well be—throughout the four years' course in the schools.

While I am speaking, I venture to add to my remarks of yesterday an important reason why schools of science ought to strengthen their conditions of admission. When it is considered that the studies of scientific schools are largely technical and professional it seems to me highly important that they should require of candidates for the freshman class as broad, thorough, and liberal a preparation as the secondary schools can give. By so doing they will serve not only the individual interests of their graduates, as they enter upon their life work, but also the larger interests of the technical professions in the elevation of the standard of culture and influence of their members.

MR. CHARLES M. CLAY, of the Roxbury High School: The programme offered by Dr. Tetlow ought to be considered at once and adopted. The alternative offered by President Eliot is an ideal alternative for the future, but it is not immediately before us for action. Dr. Tetlow's programme appeals to me as eminently practicable and the specific criticisms upon it, it seems to me, are wholly at fault, and will not bear close examination. To answer the criticism of Mr. Bradbury, for instance: For thirteen years past I have been connected with an English high school in Boston, sending pupils to Harvard College nearly every year, prepared in Latin in fewer hours than are allowed on that programme, and I never knew one of them to fail. Again, in a previous school with which I was connected, the amount of time allowed for Latin was not more than that allowed on this programme, yet it was always found sufficient.

Mr. Bradbury makes a criticism that in the city of Boston, where a teacher has vacant hours, that programme may be practicable, but outside of Boston, where teachers are not so fortunate, it is not. The proper remedy is for the schools to come to the programme, rather than to make a programme to fit the various imperfections of the different schools. Certainly if some such programme should receive the approval of colleges and preparatory schools alike, and be universally adopted throughout the state, committees would be virtually compelled

to provide adequate teaching force. The remedy lies, then, in the adoption of some such programme as this one.

MR. WILLIAM C. COLLAR: I should like to ask Mr. Clay, Mr. Ramsay, or any other high school master, if he thinks the programme offers a good way to study physics. Is it better to study three hours a week for two years, or six hours a week for one year? So of algebra; is it better to spread the work out in this way, or to concentrate?

MR. BRADBURY: Mr. Clay has just spoken of teaching in a school outside of Boston and sending a great many pupils to Harvard. Now, I venture to say that he has worked hour after hour with those pupils who were destined to go to college, *outside* the regular school hours. I appeal to him if that is not true.

MR. CLAY: No, sir.

MR. BRADBURY: That *is* the case with most teachers of our high schools who send a *few* boys (or girls) to college.

MR. WILLIAM ORR, JR., of the Springfield High School: The programme, as presented, certainly marks an advance step over existing conditions. It furnishes a point of departure in the discussion of the problem before us. Hence it seems desirable to refer this programme to the Executive Committee.

The courses in science are open to certain criticisms. Such advance has been made in the teaching of physical geography in the grammar grades that the introduction of this subject into the first year of the high school course does not seem wise. There would be a certain difficulty in bringing new and interesting matter before pupils at that period of their secondary school work.

An alternative arrangement of sciences that possesses many advantages is as follows: In the first year, botany or zoölogy; in the second year, physics or chemistry; in the third year, chemistry or physics. In the fourth year advanced classes in optional chemistry, physics, biology or astronomy and physiography should be provided for those desiring advanced work in any of these subjects.

The subject of physiography now presents much material of great value from the standpoint of information and discipline. The elementary physics of the second or third year would finish a much needed introduction to the work in Harvard physics, which is somewhat technical and quantitative for beginners.

The discussion so far has dealt with the problem of the English high school as a separate institution. There is a large body of high schools where English and classical courses are pursued under the same roof. Here the competition of the purely classical course is felt most strongly. The prestige attaching to the traditional preparation for college still preponderates and as a result the strongest students, as a rule, tend toward the classical course. In certain cases the interest of pupil, school, and college would be best advanced if the pupil took the English or English-Latin course. A due consideration of this phase of the subject is much to be desired.

PROFESSOR EDWIN A. START, of Tufts College: The question, as I read it, of "the enlargement of options for admission requirements" seems to have yielded, in a considerable measure, to the discussion of an individual programme. Now the approval of any programme for secondary schools, however admirable, does not secure the enlargement of options. That must be approached from the side of the colleges. I should like to see the discussion brought back to that point so far as possible, for there the real issue lies. Would it not be possible to put into the hands of some committee for a report next year the question of admission requirements, so that it could be brought in definite form before the Association for discussion?

Mr. CHARLES S. MOORE, of the New Bedford High School: This programme, it seems to me, does not materially alter our present status; for it is a fact, as has been shown here this morning, that pupils have already been prepared and admitted in accordance with its provisions. It does not allow option enough. We need more than it offers, and it is not radical enough to suit me at least. I should be very sorry to have the Association put itself on record as considering this an adequate advance. It does not seem a step which would be a help towards the next step. There would be danger of our being stopped in our advance by letting our aim crystallize in this way. This programme is not sufficiently in the line of progress. We need to have the principle of wider option recognized and presented more forcibly, more clearly. I hope it will be referred to the executive committee as a matter to be considered in all its bearings, and, if they so decide, to be brought up for further discussion at our next meeting. I have not Mr. Collar's scruples against voting negatively on this

motion, for I hope that the Association will not even seem to commit itself to this programme.

PRESIDENT ELMER H. CAPEN: There is an objection offered to taking definite action on this matter this morning. It has hung fire for several meetings. The motion which I offered was carefully guarded against committing the Association to this or any particular programme. But it may please you better to pass a more general resolution such as the following:

Resolved, that in the opinion of this Association there should be an enlargement of options in admission requirements with special reference to a closer connection between the colleges and the non-classical high schools, and that the Committee to confer with the Commission of Colleges in New England on Admission Examinations be instructed to confer with the Commission with a view to securing such enlargement.

By permission of the Association this amendment was substituted for the original motion.

THE CHAIRMAN: I would like to ask one question of President Eliot. Some years ago a neighboring university advanced its standard over that of Harvard University and every other university in America; did it advance the cause of education by this action; that is, does a university become superior to other universities necessarily by an advance of requirements?

PRESIDENT ELIOT: In saying what I have about admission requirements, I have had in mind real requirements enforced in practice, and not requirements which exist on paper only. The requirements for admission to higher institutions cannot be floating in the air; they must be mainly based on the actual work of existing schools. The requirements for admission to Harvard have been generally supposed to be higher than those to other institutions; but they have not been floating on air. The main difficulty with them is that they fail to connect Harvard College, as closely as it should be connected, with public high schools. A close and substantial connection would involve two things — first, options in the list of requirements; secondly, a raising of the standards on the part of the public high schools.

As an illustration of what may be effected in these two ways I may mention the connection which has been established between a few exceptionally good English high schools and Harvard College through

the adoption ten years ago of a method of entering Harvard College without Greek, the substituted studies being higher mathematics and science. A few English high schools have steadily availed themselves of this option, and have sent us well-trained pupils without Greek. From public, endowed, and private schools more than two hundred such young men have thus entered Harvard College, and they have done decidedly better in college than the average of their associates who came in with Greek,—that is to say, they have been better able to profit by a four years' residence at college than the average of their associates. On the other hand, the schools from which they came were obliged to enlarge their own work in order to provide the higher teaching of mathematics and science demanded by the college.

THE CHAIR: There must also be some reasonable conformity in those requirements to the capacities of the preparatory schools?

PRESIDENT ELIOT: Yes, sir, exactly.

MR. CHARLES W. KNOX, of St. Paul's School: I should like to ask President Eliot whether the boys referred to were not a gifted few and the teaching given them exceptionally good and painstaking. For programmes and requirements, we must have in mind not the few best students but the average many, and the average teacher, dealing with a large class and giving few extra hours.

PRESIDENT ELIOT: Advanced mathematics on this programme is optional.

MR. KNOX: I asked the question because advanced mathematics is just that subject which brings out the best boys and is not likely to be taken as an option by inferior students. Can science as yet be trusted to hold up the bars in entrance examinations? Can English, or history, or modern language? Would not immediate enlargement of options in those directions be letting down the standard of Harvard University, so that its actual level of requirements and degrees would be lower than at present? Neither the university nor the scientific schools should offer easier entrance than now. It seems to me that the present substitute-requirement for Greek at Harvard has worked admirably and should not be changed as yet.

PRESIDENT ELIOT: I must apologize for having contributed to concentrate the attention of the meeting on Harvard College; but I

think that this particular experience of Harvard College in admitting students without Greek has really a broad interest. Doubtless the young men thus admitted from English high schools have been a select few. They were the most ambitious pupils in those schools. They were admitted under peculiarly stimulating circumstances, no doubt, and constituted a picked lot.

But does not this experience show that the modern subjects represented in the programme before us afford suitable and adequate preparatory training for college work? Does it not prove that this English high school programme can train young men for college as well as for business? If this set of subjects will train young men for the alert, effective and enjoyable use of their faculties, they will answer the supreme end of education. A great many men have maintained for generations that there is only one way to obtain that effective use, namely, by the study of Greek, Latin and mathematics. We are no longer obliged to accept that narrow doctrine.

President Capen's resolution was again read and then adopted.

Moved by Mr. Collar, and voted, that Dr. Tetlow be a member of the committee to present this subject before the Commission of Colleges in New England on Admission Examinations.

Adjourned.

RAY GREENE HULING,
Secretary.

CAMBRIDGE, MASS.

THERE is nothing better in the country, of its kind, than the Annual Conference of the Associated Academic Principals of the state of New York. This year it is held, as usual, at Syracuse, the date, December 28 to 30.

ALTHOUGH this number of the SCHOOL REVIEW exceeds the regular size by eight pages, it has been necessary to omit a large amount of valuable matter in order to make room for the invaluable report of the meeting of the New England Association.

THE Head Masters' Association will meet on December 29, 10 A.M., at the Murray Hill Hotel, New York City. The subject for discussion will be "Uniformity in College Entrance Requirements." Among the speakers are President Low, of Columbia University, and Professor Seymour, of Yale.

THE meeting of the Association of Colleges and Preparatory Schools of the Middle States and Maryland at Philadelphia was the largest attended and

most interesting of any in the history of that organization. The best things said will be found in an early number of the SCHOOL REVIEW, probably the January number.

ESPECIAL attention is invited to the Fourth Annual Session of the New York State Council of Grammar School Principals, which meets at Syracuse, N. Y., December 29 to 30. The main evening address will be delivered by President Schurman, of Cornell University. This organization should play an important part in future educational development in New York.

THE Illinois State Teachers' Association will hold its annual session at Springfield December 29 to 31. The subject of the opening address is "Mechanism in the Public Schools." Mrs. Eva D. Kellogg, editor of *Primary Education*, is the speaker. Wednesday morning will be devoted to a thorough discussion of "Free Text-Books." Professor David Felmley, of Normal, will lead the discussion, followed by Mr. Joseph Errant, of the Chicago Board of Education, and others. On Wednesday evening Dr. Edmund J. James, of The University of Chicago, will deliver an address upon "The Public High School the College of the Future."

On Thursday morning Dr. Arnold Tompkins, of the University of Illinois, will speak upon "The Aim in Education." The programmes of the different departments, universities, high school, child study, etc., are of unusual interest and will afford the teachers of the state an opportunity of hearing some of the most eminent educators of the country. An unusually large and enthusiastic attendance is anticipated.